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BETTER FRUIT

VOLUME XVI

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NUMBER 3



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By Specialists of the
Bureau of Markets, U. S. Dept.
of Agriculture

Better Fruit's Standard Apple Packing Chart

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Has the Farmer a Real Grievance?

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He has a real grievance because the prices he receives for his products have declined more than have the prices he must pay for almost everything he buys.

Because of these facts the farmers are not making as large profits as they believe they are entitled to make. Some blame their troubles largely on the railroads. "Freight rates," they say, "are the cause of low prices for grain and live stock."

The real cause lies much deeper. The decline in the prices of farm products began before freight rates were advanced, and would have occurred if freight rates never had been advanced. It is due to world-wide changes resulting from the transition from war to peace.

The Railways Have the Same Grievance as the Farmer

The rates the railways are getting, although they have been advanced, are much lower in proportion than the cost of almost everything the railways must buy.

High Costs Make High Rates

The average passenger rate is about 50 per cent higher, and the average freight rate about 74 per cent higher, than five years ago—in 1916, before this country entered the war.

From these facts it might be thought that the railways should be making money.

BUT—the prices the railways are paying for

Materials and Supplies are now 65 per cent higher than in 1916;

Taxes are 90 per cent higher;

Coal per ton is 144 per cent higher; and

Wages of railway employees are still 124 per cent higher per hour.

In consequence of these things, while the total earnings of the railways are 60 per cent greater than in 1916, THEIR EXPENSES ARE 110 PER CENT GREATER AND THEIR PROFITS, SINCE THE PRESENT FREIGHT AND PASSENGER RATES WERE MADE, HAVE BEEN LESS THAN ONE-HALF AS GREAT AS IN 1916.

What Has Happened to the Railroads Since 1916:

Increase in Revenue	60%
Increase in Expenses	110%

In 1916 railway wages were \$1,469,000,000. After the Railroad Labor Board advanced them last year they were at the rate of \$3,900,000,000, an increase of 165 per cent. The recent reduction ordered by the Labor Board was only 12 per cent, leaving wages about \$2,000,000,000 greater than in 1916.

Coal cost \$1.76 per ton in 1916, the total fuel bill being \$250,000,000. In 1920 the average price was \$4.20 per ton and the coal cost \$673,000,000, or \$423,000,000 more than in 1916. The average cost of railway coal is now \$4.29 per ton.

With prices of materials and supplies still 65 per cent higher than in 1916, the materials and supplies which the railways bought for \$447,000,000 in 1916 would now cost them \$750,000,000, or over \$300,000,000 more.

Present Railway Rates Chiefly Due to Labor Costs—Not to Return on Capital

Existing railway rates are higher not because railroad capital is receiving or seeking a larger return, but because railroad LABOR, and labor producing things the railroad must buy, is getting so much more than formerly.

EVERY INCREASE in rates since 1916 has been intended to meet—but has not met—these increased expenses, CHIEFLY LABOR, and NOT to increase profits.

Railway profits have GONE DOWN.

In 1916 the railroads earned 6 per cent. In 1921 they will be fortunate if, on present rates and present expenses, they earn 3 per cent.

A GENERAL reduction of rates now could not be made without BANKRUPTING most of the railways and making business of ALL KINDS much worse for everybody.

The managements of the railroads are making every effort to reduce expenses so that rates can be reduced later. Some reductions of rates already are being made.

There is NO OTHER WAY than by reductions in expenses to secure general reductions in rates that will not be ruinous to the railways and make them unable to render to the farmers the transportation service they need. Those who obstruct reduction of expenses not only hurt the RAILROADS but the FARMERS as well.

Association of Railway Executives

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Those desiring further information on the railroad situation are requested to address the offices of the Association or the presidents of any of the individual railroads.

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"SPREADO" increases the wetting and covering power of your Bordeaux, making your spray go further, thus more than paying for itself in the saving of spray material.

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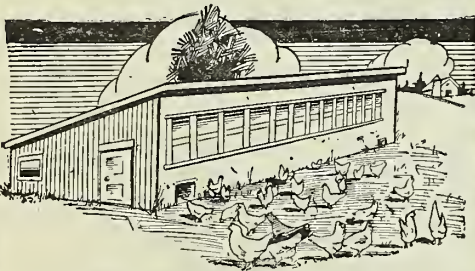
Start the agitator; begin filling tank; sift in gradually the required amount of "SPREADO," keeping agitator in motion until the tank is filled and spraying is begun.

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BETTER FRUIT

Pioneer Horticultural Journal of the Pacific Northwest

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Power Farming's Victory in the Orchard

By H. M. Boland of the California Peach and Fig Growers' Association

The prediction that the same economic forces that caused the horse to supersede the ox in the nineteenth century would displace the horse with the tractor is coming nearer and nearer fulfillment. In sections of the country where there are hard surfaced roads, the tractor and the motor car and truck have caused the abandonment of horses almost entirely while everywhere that the use of these agencies is at all practicable the use of horses is rapidly declining.—EDITOR.

POWER farming has achieved a signal victory in the fig growing sections of California which center in the city of Fresno. Its progress is shown in the universal adoption of the tractor for the cultivation and care of the vast tracts which are being planted to figs in the interior valleys of the state. An old venture in point of years, fig growing has recently assumed the dimensions of one of the state's foremost fruit industries and is characterized by the introduction of the most modern methods of culture, both through necessity and expediency.

Large tracts have been planted to figs in the past six years in California and with the progress made in bringing the fruit to a high point of quality, it is believed that in the near future, the state will supply the markets of the nation with American grown figs.

Practically every important fig orchard in the San Joaquin valley district is now cultivated by tractor rather than by old fashioned methods of horse and man power and the fact is doubly significant on account of the keen competition which is being met in the struggle between the old world and the new for the time-honored fig commerce.

Investigation by the U. S. Department of Commerce and others has established that the interior valleys of California are perfectly adapted to the culture of the fig. In soil, climate and in other natural characteristics it has been found that the difference between the California valleys and the favored sections of Asia and Europe

where heretofore the fig has reigned supreme is so slight as to hardly warrant distinction.

In establishing this fact, the greatest surprise was occasioned by an experiment in which a box of figs was dispatched to Smyrna, where fig growers of that section were loud in their praise of the product, claiming that the figs were not California grown, but Smyrna grown, and in some cases the orchards in Smyrna where the figs were supposed to have been grown were named.

WITH the establishment of the fact that in quality and appearance the fruit of the Pacific Coast could not be surpassed, the advantage in seeking the commerce of the nation has hinged on the possibility of producing as economically and an equal or better yield per acre.

It is believed that perfecting of tractor power for use in the orchards is going to play an important part in the development of this commerce in America and that this realization has been brought home to growers is indicated by the rapid adoption of tractors in orchard cultivation, one of the most important phases of successful fig growing. Fig trees, it has been found, can stand neglect in many ways, but for the sweet, wholesome fruit, such as California has developed in the past few years, intensive cultivation is an absolute essential.

The fig is grown in sections where the

hot summer sun and the cool nights impart to the fruit the flavor and high sugar content which has made it one of the most popular fruits with mankind for untold centuries. But the fig is a fickle fruit. An extra abundance of water will cause such rapid growth of the fruit that it swells and splits, making it unfit for commercial purposes. Extreme moisture also causes a fermentation which gives the fig a sour taste and deprives it of the exquisite aroma which has increased its popularity.

THE ideal fig country is where the moisture is retained uniformly in the soil, permitting the tree roots to take it as needed, but it must be ever present in sufficient quantities to insure a healthy condition.

It has been found that the only way to secure this uniformity is by intensive cultivation which forms a mulch, keeping the moisture from evaporating under the burning rays of the California sun and doing away with the capillary attraction that causes the moisture to evaporate through the tubular formation of sun-baked soil.

In Asia and Europe, the cheapness of man power makes it possible to cultivate intensively with comparatively little cost and with the crude implements that have been used for centuries.

In California it is different. With manual labor commanding four and five dollars a day, and sometimes inefficient at that, the progressive element among the orchardists



A battery of tractors at work in a 12,000 acre California fig orchard

turned to the tractor. It has been found in certain cases that one tractor, intelligently operated, dispenses with the services of several men. Actual accomplishment persuaded the orchardists that their salvation lay in the direction of tractor power and it has been almost universally adopted.

One of the pioneers in the use of tractors has been the J. C. Forkner Fig Gardens, the largest fig orchard in the world which is just coming into bearing. It is a 12,000 acres tract situated just outside of the city limits of Fresno and is one of the show places of California.

One of the secrets of the Forkner Fig Gardens has been tractor cultivation. It is evident that a 12,000 acre tract would require an army of men to care for it and give it the intensive cultivation that has been adopted as the best means of producing quality figs. Their system of culture calls for irrigation in mid-winter when the rainy season is at its height and through this aid to nature, the ground is saturated with moisture. As spring comes along and it becomes possible to turn the tractors upon the land, the battery of power cultivators is released and all during the hot summer months, the orchards are disced and cross disced giving the underlying soils the uniformity of moisture sought.

THIS year a battery of 87 tractors is employed which gives each tractor about 125 acres to care for. The trees are so pruned that a tractor with its disc cultivators can cover the orchard up to within a few inches of each tree and a foot or so about the base of the trunk is the only section of the orchard requiring hand cultivation.

It is believed that the employment of tractors on a large scale by the J. C. Forkner Fig Gardens will establish a new idea in the use of farm power in many sections. There are several hundred individual owners within the confines of the tract, but all the work of cultivation and care is done by this main organization, under contract to individuals. In some cases they are resident owners who are employed by what may be well termed an orcharding corporation, in other cases they are city dwellers raising figs as a hobby or investment.

The fig was one of the first fruits introduced into America, being brought by the Franciscan padres through Mexico in the 17th century. It was then established that the fig would thrive in California. It was not until the last ten years, however, that tractors has been the J. C. Forkner Fig Gardens commercially profitable.

A great measure of its obscurity no doubt was due to the lack of intensive cultivation. The era of the tractor made intensive cultivation possible and the fig has gone forward by leaps and bounds. It solved the secret of the quality fig and this quality is winning recognition. It is through the "quality fig" that California hopes to win

the markets of the world and it is through greatly improved cultivation made possible by tractor power that the orchardist has been able to bring the fruit to its present high standard.

LAST fall the fig growers affiliated with the peach men in an association known as the California Peach & Fig Growers with 8,000 members. The association will take the marketing cares off the shoulders of the growers leaving them free to devote their energies to improving their product.

One of the first institutions of co-operative endeavor to be established was a "growers' school." The orchardists traveled over the fig belt studying methods of culture employed in both successful and un-successful orchards. At the J. C. Forkner Fig Gardens several hours were spent watching demonstrations of cultivation methods, a feature of which was the performance of the tractor battery. Those that marveled at the growth and appearance of the mammoth acreage were initiated into the secret of tractor cultivation and the efficiency and economy of the operation which is making this modern "Garden of Eden" a success.

Fire Blight

REPORTS from various sections in the Northwest to the effect that fire blight is spreading make it necessary to exercise the utmost vigilance to detect it in its first stages and then to use the most efficient and drastic methods to eradicate it. Owing to the rapidity with which this most disastrous of tree diseases gains a foothold and progresses, growers should become informed of its advance symptoms and be on the alert against it.

In describing the presence of fire blight H. P. Barss, professor of the department of botany and plant pathology of the Oregon Agricultural College, says that it is first noticed by a wilting of the blossoms and leaves on the fruit spurs or the young shoots. Drying up of the branch and foliage soon follows this action. Later the infected parts become black or brownish, giving the appearance of having been scorched by fire—hence the name fire blight.

As the disease progresses it often runs down from the tender growths to the larger branches, main limbs and trunks of the trees and into the root system. The bacteria also often enters the roots from the suckers. The final result of the blight is to girdle the part attacked. In fact, so destructive is this disease to an orchard, if not checked, that within three or four years from its first appearance, in the severest cases, the trees have to be removed. Pear trees are particularly susceptible to fire blight and some varieties of apple trees more so than others. The Spitzenburg, for instance, has been found to be highly susceptible while other varieties, notably the Newtown, are more resistant. Growing seasons when moist, warm weather prevails

are favorable to the infection and spread of fire blight.

Many remedies have been tried for eradicating this disease, but once it has gained a strong foothold, the only method that has been successful is that of cutting it out. As a preventive in its incipient stages some degree of success has been attained by the use of special sprays for this purpose.

IN CUTTING out fire blight all the affected parts should be removed and also some of the area around the infection. The work above ground should be followed by a careful inspection below the surface. This should be done by digging the dirt away from the base of the trunk of the tree to determine if blight discoloration is present. If it is the cutting out process should be applied to the base and roots of the tree as carefully as the portion above ground. As the disease is highly infectious the wounds made in cutting should be disinfected with a solution consisting of one gram of cyanide of mercury and one gram of bichloride of mercury to 500cc of water, while all tools used in cutting or pruning trees affected with fire blight should also be disinfected.

The orchardist whose trees may be subjected to an attack of this disease will be well repaid by scrutinizing them frequently and carefully and applying remedial methods at once if they become infected.

Must Remove Spray

SHIPPERS and growers of fruit in the Northwest who do not want to take a chance on having their fruit condemned will remove spray residue. The United States Department of Agriculture has issued a ruling to the effect that fruit having spray on it will be condemned. The ruling was made after fruit growers at Medford had complained to the department that a federal inspector was working a great hardship on Southern Oregon growers by requiring them to remove the spray. When complaint was presented to the department the action of the inspector was upheld and fruit shippers and growers warned that the spray must be removed.

Oregon's apple crop this year is estimated by F. L. Kent of the Bureau of Crop Estimates to be 5,139 cars. The 1921 pear crop of the state is placed at 8,000 tons and the prune crop at 21,610,000 pounds.

Thank You!

"I could not afford to do without Better Fruit any more than I could do without my sprayer. They are both specialists in their respective callings."

—Excerpt from letter of J. R. Allen, Neppel, Wash.

Making Boxed Apples Safe for Delivery

By Curtis Strong, Manager Box Department West Coast Lumber Co.

THE importance of better made apple boxes is of particular interest to dealers and shippers of the Pacific Northwest this season. If plans of the Northwest committee on water transportation work out as predicted at this time, a total of \$20,000,000 worth of boxed apples will move from

the box is increased more than fifty per cent.

It was further demonstrated at the laboratory that six six-penny cement coated nails in each side nailing edge will give decidedly better results than the nailing method represented in the guide issued by the

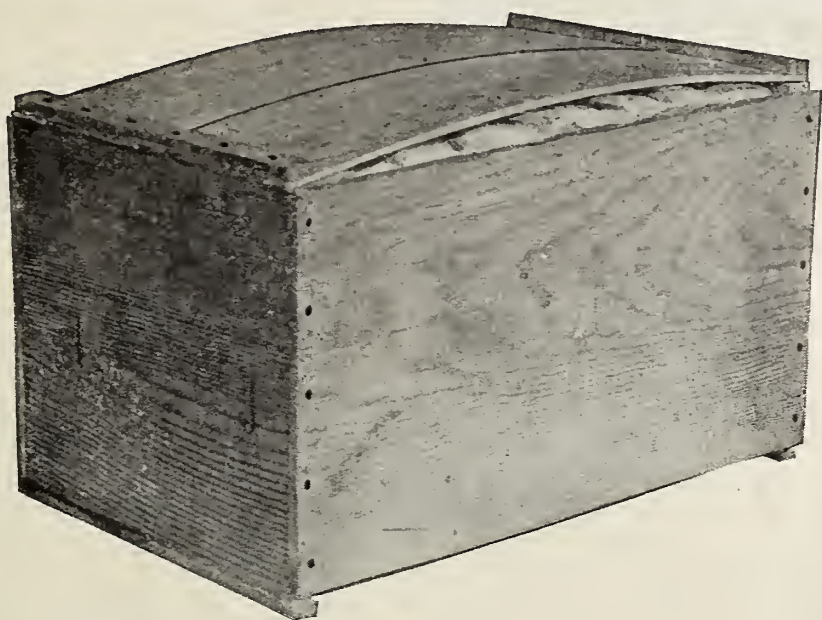
strapped boxes were received in excellent condition.

Losses common to transportation of farm products by both water and rail have been increasing each year. Recent investigation of hundreds of damage claims against the railroads convince marketing officials that these losses could be eliminated and the railroads saved continual annoyance and expense in settling claims if more care were used in packing, nailing and strapping.

Loss and damage claims reported by the Consolidated Freight Classification estimated for 1919, due to improper nailing and lack of strapping, was over \$100,000,000.

It has been demonstrated that the slight expense for two three-eighth-inch flat straps, applied just inside the cleats, drawn tight and sealed is warranted, in view of the increased strength of the box. The application of straps permit rough handling, prevents pilfering and prevents loss and damage to the contents.

The Pacific Northwest grower and dealer in apples does not find the objection to the use of the corrugated metal fasteners as has been the case in previous years. Since manufacturers have installed proper machinery for this work, the work is done so much more efficiently than is possible to do it by hand there is no serious objection to the use of metal fasteners. A recent order of 50,000 apple boxes placed in the Pacific Northwest specified that ends could be 75 per cent two-piece stock if properly fastened with corrugated metal fasteners.



Proper Nailing of Standard Northwest Apple Box

the Pacific Northwest to Eastern and Gulf markets in the intercoastal steamships equipped with refrigerator space.

Preliminary but reliable estimates indicate that there will be an excess of 30,000 carloads of apples produced in the country tributary to Seattle and Portland ports, and if rates tentatively promised by the steamship companies are put into effect together with adequate cooling space, as carriers have promised in return for pledges of 4,000 carloads of fruit to be shipped, it is reasonable to expect that a much larger number of cars will move to these ports for shipment by water.

In co-operation with growers and dealers the box department of the West Coast Lumbermen's Association has prepared a very complete mailing guide covering the fundamentals in preparing shipments for safe delivery. This consists of an eight-page letter enclosure, featuring half-tones of a properly nailed box and also one of a box properly nailed and strapped for shipment by water.

It has been very clearly demonstrated at the laboratory of the United States Forest Service at Madison, Wisconsin, that the average wooden box is made from sufficiently heavy lumber, but failure and damage losses are largely due to insufficient care in proper preparation of packages.

The data shown in the mailing guide is based on tests made at the Forestry Products Laboratory at Madison. It is very interesting to note that with one extra nail added to each nailing edge the strength of

On a recent shipment of 30,000 boxes of apples from the Pacific Northwest through the canal to England, the American Agricultural Trade Commission at London reported that there would have been no breakage whatsoever had there



Proper Strapping of Apple Box for Waterborne Shipments

been a few more nails used in the nailing of the shooks.

Last season over 2,000,000 boxes of apples were strapped and shipped from the Pacific Northwest. Reports received from foreign ports showed that all properly

The president of the Hood River Apple Growers' Association recently reported that it has received 15 cents additional per box for apples on the New York auction market, due to the fact that they use nothing but

(Continued on page 19)

Picking for Flavor and Keeping Quality

By F. W. Allen, Assistant Professor of Pomology, University of California
Formerly in Charge of Storage Investigations in the Northwest, Bureau of Markets,
Department of Agriculture

WHILE the general topics of how to grow, prune and spray orchard trees are important and by their nature essential as a basis for success, yet these long discussed fundamental problems are gradually giving place to more specific topics or phases of these subjects, which in one way and another have to do not only with increased production, but with placing on the market and into the hands of the consumer a product of increasing high quality.

The reputation of the Northwest apples is not based upon the large number of cars shipped to the Eastern markets, certainly not upon the closeness, or rather remoteness, of the fruit-producing districts from those markets, but rather upon the superior class or quality of the fruit produced. The apple is a fruit having wide distribution. It can be produced in many sections, some of which have material marketing advantages over the Northwest, and today the question of transportation and marketing is proving to be a problem of very vital importance.

Thus with the competition of other sections which may be able to produce and market apples at less cost, there is only one reason why the Eastern trade demands Western apples. It can be summed up in the word "Quality," and quality implies superiority.

A superior product has no competition and under any kind of normal conditions will always bring what it is worth. The consumer, however, is becoming more and more critical. The standard of quality today is different from what it was yesterday; and, furthermore, the grower may have a higher opinion of his fruit than does the buyer. This comes about quite often owing to the changes which may take place in the fruit in transit. The grower must anticipate the appearance and quality of his fruit at the time it is exposed for sale on the distant markets.

BY "quality" one may first think of size, freedom from blemishes or fine, attractive color. These are all attributes of quality, but quality itself is generally thought of in connection with the flavor and texture of the flesh. Thus fruit purchased solely on appearance may sometimes prove disappointing. Apples of high desert quality may prove in some cases of poor quality for culinary purposes, while some of the leading varieties for baking should not be selected to eat out of hand. Each variety has more or less of a characteristic flavor which is soon recognized, and it is, of course, not within the grower's power to transform a Ben Davis into the quality of

a Spitzenburg. It is, however, within his power to influence the quality of his apples to a certain extent, and the relation between the time of picking and quality is one of the factors now receiving considerable attention.

It is assumed that there are very few fruit growers who do not remember at some time in their lives of harvesting and eating a goodly number of apples considerably in advance of the normal picking season. Doubtless these were all pronounced of fine flavor at the time, but since one's taste generally changes we now recognize that the real characteristic flavor is not noticeably present early in the spring, but develops later in the season as the apple ripens or passes through certain chemical changes. Chemical analysis shows that the growing apple, aside from being 80 to 85 per cent water, contains some 3 to 4 per cent of starch and from 10 to 20 per cent sugar; also small amounts of malic acid, tannin, cellulose and esters. While all of these constituents bear a certain relation to dessert quality, yet the one which seems of primary importance in connection with flavor and aroma is the small quantity of esters or flavoring oils. While the relative amount of acid present determines whether the apple will be classed as sprightly sub-acid or sweet, yet it is the flavoring oils, concerning which we still know but little, that give the variety its particular taste.

AS mentioned above, during the growing period the apple has little flavor; the esters are not present, but there is found considerable starch, a quantity of tannin and a relatively high percentage of acid. The apple is sour and starchy. After full size is obtained the fruit gradually enters a second period, or ripening stage, when the tannin and astringent taste disappear, the acid decreases and the starch changes into sugars. It is in the latter part of this period that the flavoring oils are present in greatest quantity and the apple is in prime condition for eating. The length of time which the fruit remains in this stage depends both upon the variety and the manner in which it has been handled or stored. At best, however, it is a short period, as even cold storage, which checks life processes, cannot entirely stop them. After reaching full ripeness the fruit passes into a subsequent period of decline and decay. The flesh breaks down, becomes mealy and there is a loss of the sugars and flavoring oils. With the apple a living organism passing through the above changes, at what time should it be harvested for highest quality?

We usually speak of picking fruit when it has reached maturity, but maturity in this

sense is quite different from best eating conditions, or, as we generally say, "ripe." Most fruits, the pear excepted, are regarded as being of better flavor when allowed to ripen on the tree or vines. This practice can be followed with some early apples, where they are grown for local markets. In the case of fall and winter varieties—the leading commercial sorts—it is, of course, impossible to allow the fruit to reach its maximum degree of flavor before harvesting. We do know, however, that certain varieties, the Delicious being a notable example, if picked before reaching its normal color, does not have a flavor that at all coincides with the name of the variety. It is certainly safe to say that picking before the fruit has developed its normal size and color will prove to be at the expense of quality. We cannot allow the fruit to become ripe, but it should be allowed sufficient time to reach its proper stage of maturity. The importance of proper maturity cannot be emphasized too strongly. To try to state dates in this connection would be useless. The time of picking is exceedingly variable and can only be ascertained by careful discrimination on the part of the grower. Numerous factors may be taken into consideration to determine when the apple has reached proper maturity for picking. The U. S. Department of Agriculture believes that the most reliable single indication is the "ground color" of the fruit. This ground color, which is green when the fruit is immature, begins to whiten or yellow slightly as the fruit reaches maturity. With such a variety as the Winesap, where the red over-color most often entirely covers the green ground, this factor would be of little value.

IN considering the time of picking for flavor it should always be kept in mind that the fruit must be well grown. A poorly grown, poorly fed or under-watered tree cannot produce apples of flavor, whether they are picked early or late. The apples must develop properly. If the size is small, let us examine the soil for its supply of water or food elements; if the color is lacking, pruning is needed. Thus *picking* for flavor goes hand in hand with *growing* for flavor.

It is interesting to note that evidence seems to indicate that a relatively cool atmosphere is desirable for the development of high flavor. Summer and early fall apples do not as a rule possess high flavors, and Stewart found that the late fall and winter apples grown so far south that they ripen before cool weather comes on are likely to be lacking in this regard. On the other

(Continued on page 20)

Apple Packing House Needs of the Northwest

By Specialists of the Bureau of Markets, U. S. Department of Agriculture

"The construction of well-planned and well-equipped packing houses is essential to the economical handling of boxed apples in the Northwest. The recent building program has not kept pace with the demand of the industry, and severe losses have been sustained on account of limited facilities for packing and for storing unpacked fruit temporarily. The situation has been aggravated by the enormous increase in production during the past few years, as well as by the serious shortage of transportation equipment."



Small type of frost proof Northwest apple packing house. Although constructed of tile, this type of house is both poorly lighted and ventilated.

SPECIALISTS of the Bureau of Markets and Crop Estimates, United States Department of Agriculture, thus sum up the results of their study of methods and practices which have given the greatest satisfaction in commercial operations. Full details of the work are contained in Farmers' Bulletin 1204, Northwest Apple Packing Houses, recently issued by the department.

Apple packing houses may be classified in two groups, individual packing houses, which are more commonly known as ranch packing houses, and community houses, operated either by co-operative associations or by individuals. The percentage of the crop packed in community houses is increasing steadily, and though no definite figures are available, careful estimates show that the amount increased from about one-fourth of the total crop in 1916 to approximately one-half of the crop in 1919.

The same basic principles of construction and equipment apply to all types of houses, and the equipment and methods of operations in an orderly way, moving in one direction from the receiving point to the storage or car.

COMMUNITY packing houses are especially desirable in the apple-growing districts of the Northwest, where the acreage is usually concentrated in the river valleys, and where individual holdings with few exceptions are small, ranging from 5 to

15 acres. A group of growers by joining forces may easily finance the erection of a modern packing establishment. In a community house it is possible to perfect an organization of trained men to bring the grading and packing operations to a uniform high standard. The operations are generally on a scale large enough to warrant the employment of competent workmen to supervise the various operations, and the cost of inspection is greatly reduced by having this work done at a central point. The cost of packing in a community house is not always lower than where the work is done by the individual, but it usually can be done more rapidly.

One important factor in favor of central houses is better conditions for the employment of labor. Very few of the smaller ranches have adequate housing and subsistence facilities for the care of their additional help during the packing season. Some growers have tried hauling the packers back and forth from town each day, but this practice is not satisfactory because much time is lost on the road. Then, too, help is usually at such a premium that if one person is tardy in reporting, the grower will detain the rest of the crew awaiting his arrival. As the work is generally paid by the piece, the workers are inclined to seek employment where they can put in full time and have comfortable living quarters.

THE best site for a ranch packing house usually is found near the residence and other farm buildings, close to the main traveled road. Such a location is particularly desirable where there is a common storage house in connection with the packing house, as the storage house is usually air-cooled and requires the attention of some one to operate the ventilators during the storage season. If the house is a great distance from the ranch house it is less likely to be cared for properly.

Wood, brick, concrete, or tile are used in the construction of packing houses, the choice of materials being determined by the cost and the fire risk. As the packing and storage rooms are usually parts of the same building, the same material is ordinarily used in its construction, although the storage room is insulated, and the packing room is not.

The most important feature in the construction of the packing house, but the most commonly neglected, is the arrangement for proper lighting. The most efficient work is possible only when the room is properly illuminated at all times. Most people understand that dim lighting interferes with the accuracy and efficiency of grading operations, but comparatively few realize that the glare of a direct light is equally bad. Hipped-roof skylights and high windows in sufficient numbers to light the interior thoroughly are the most satisfactory methods of lighting. The hipped-roof skylight is preferable to a straight, plain glass, as the style of construction permits it to receive light throughout the day.

THE successful co-ordination of the many different operations involved in packing Northwestern boxed apples requires in each case a study of local conditions. It is impossible to lay down certain principles which should be followed always; but where it is necessary to determine precisely what style of construction or type of equipment is best suited to the particular needs each packing house becomes a separate problem.

(Concluded on page 21)



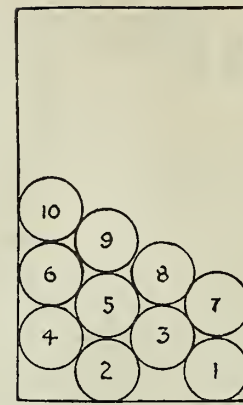
Large type of Northwest apple packing and air cooled storage house. Only the latter, however is frost proof

Better Fruit's Standard Apple Packing Chart

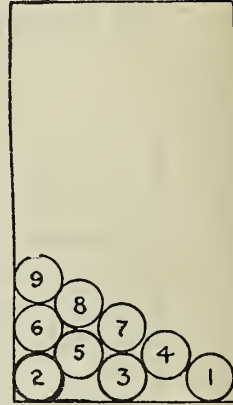
All packs to go in the Northwest Standard Box— $10\frac{1}{2} \times 11\frac{1}{2} \times 18$ inches inside measurement

THE apple grading rules and regulations used in connection with the packs illustrated below are the new ones adopted for 1921 by the State Agricultural Department of Washington and are largely the same as those that are used in Oregon, Idaho and Montana with slight variations in the grading. All the packs here described are for the standard apple box measuring $10\frac{1}{2} \times 11\frac{1}{2} \times 18$ inches inside measurement. Description of all packs not illustrated can be found under the heading "Apple Packs."

All apples packed under these regulations shall be arranged in the container according to approved and recognized methods and all packages shall be tightly filled, but the contents shall not show excessive or unnecessary bruising as a result of the pressure exerted in enclosing an over-filled package. Each packed box must show a minimum bulge of one-half inch on both top and bottom. Any apples wrapped shall be well wrapped to prevent "flagging."

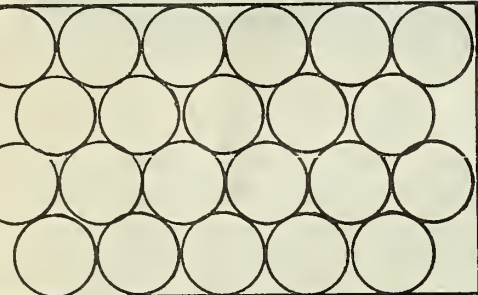


How to start a 2/2 diagonal pack



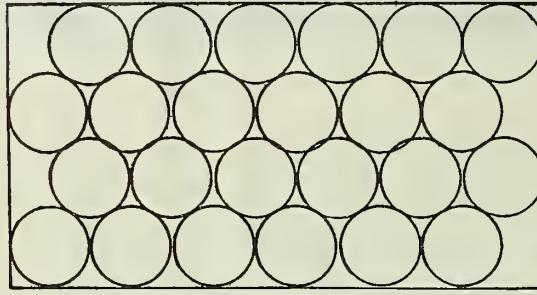
How to start a 3/2 diagonal pack

Diagonal 2/2 pack, 4 layers, 88 apples



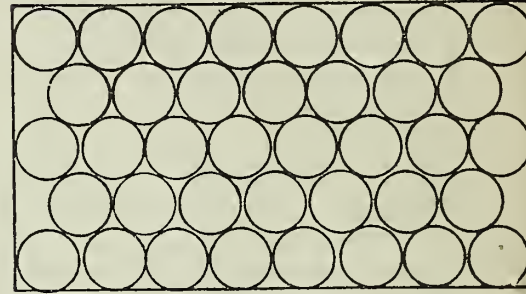
First and third layers

Diagonal 2/2 pack, 4 layers, 96 apples

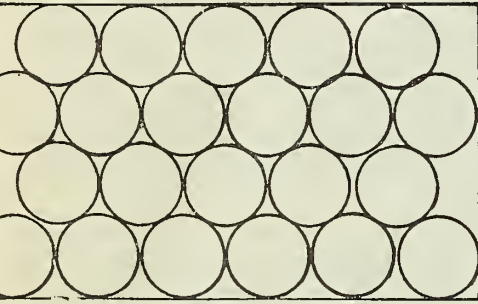


First and third layers

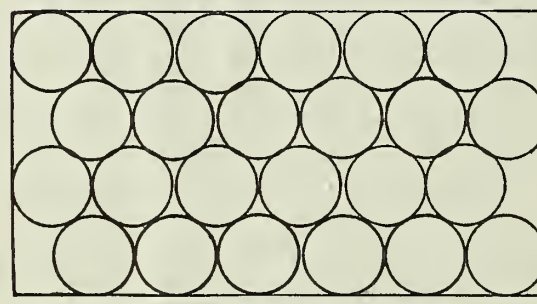
3/2 pack, $4\frac{1}{2}$ tier, 5 layers, 188 apples



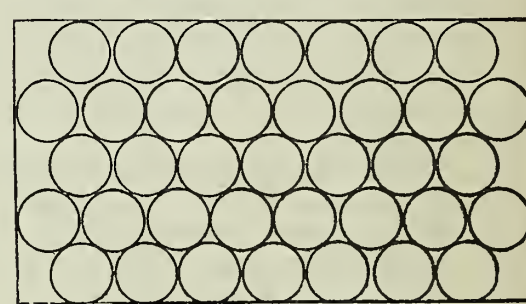
First and third layers



Second and fourth layers



Second and fourth layers



Second and fourth layers

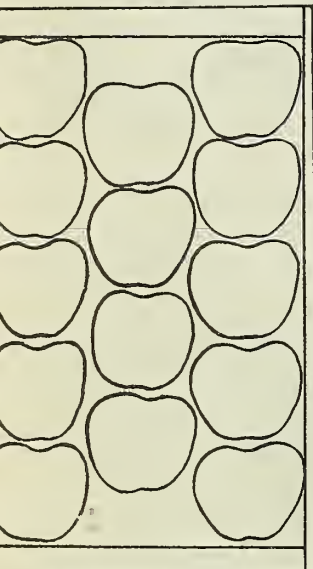


Figure 1—41 apples

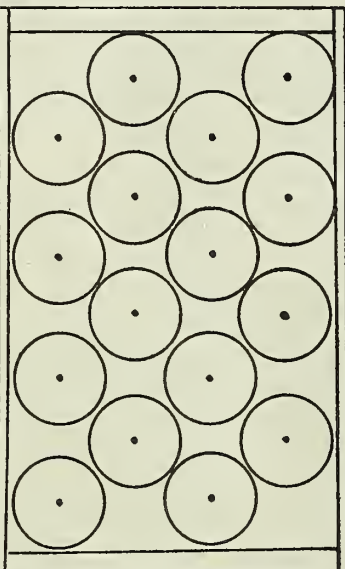


Figure 2—64 apples

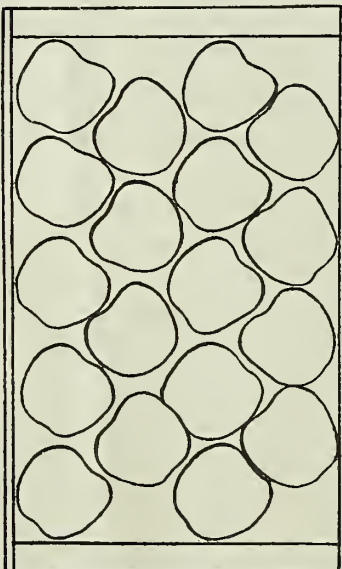


Figure 3—72 Apples

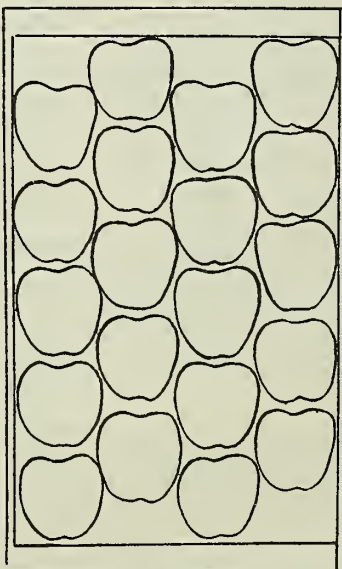


Figure 4—30 apples

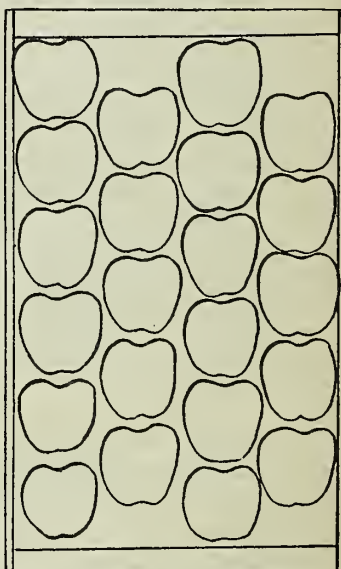


Figure 5—88 apples

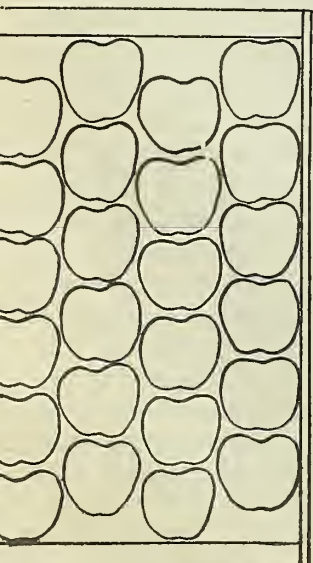


Figure 6—96 apples

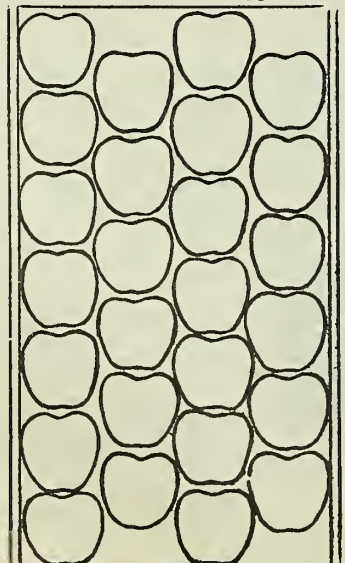


Figure 7—104 apples

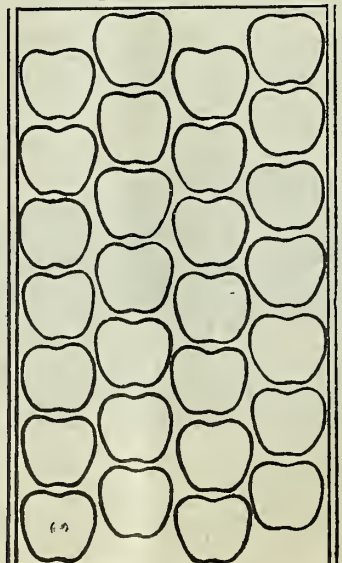


Figure 8—112 apples

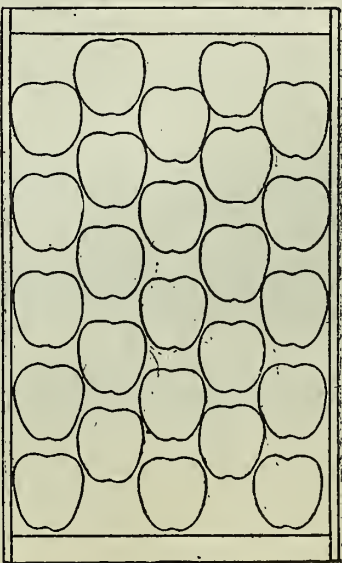


Figure 9—125 apples

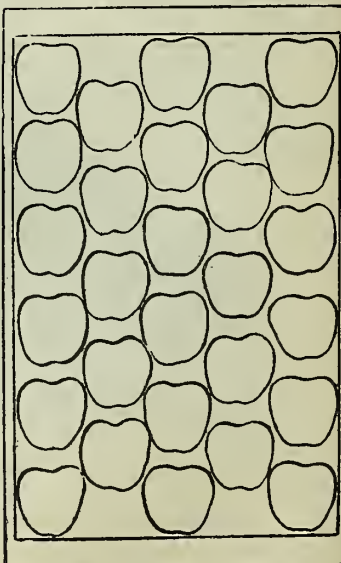


Figure 10—138 apples

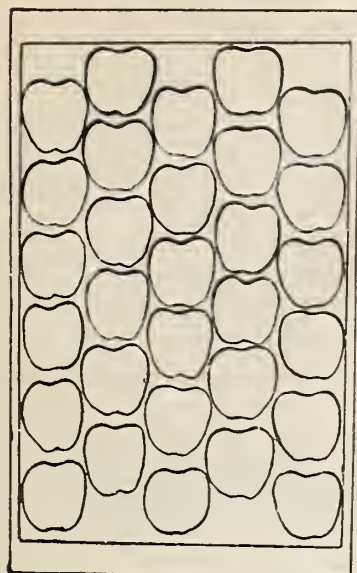


Figure 11—150 apples

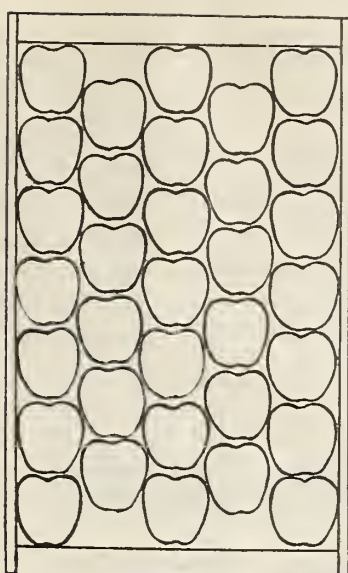


Figure 12—163 apples

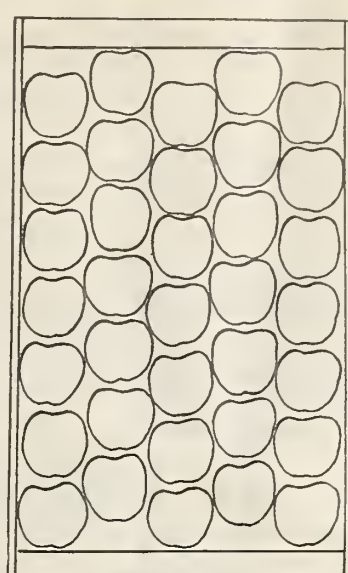


Figure 13—175 apples

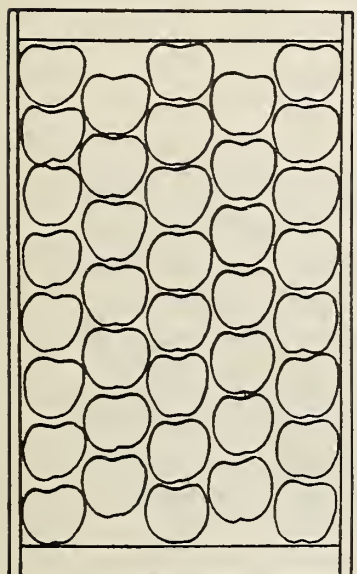


Figure 14—188 apples

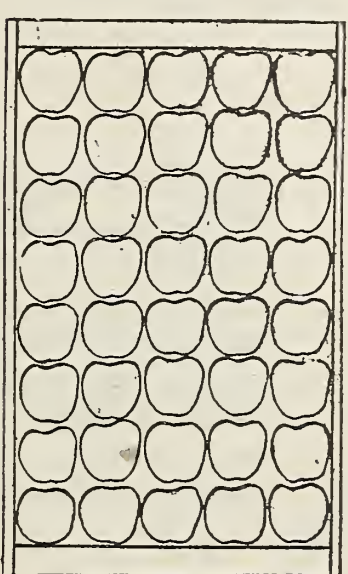


Figure 15—200 apples

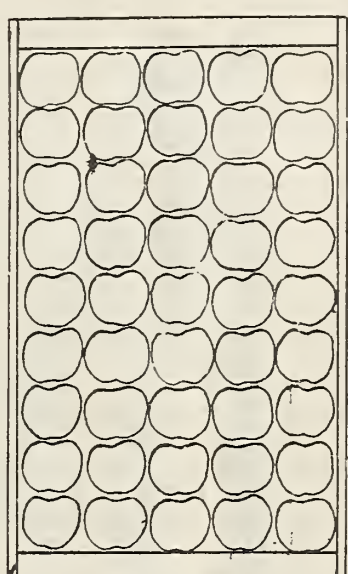


Figure 16—225 apples

Apple Grading Rules—Season 1921

Extra Fancy—Extra Fancy apples are defined as sound, mature, clean, hand-picked, well-formed apples only, free from all insect pests, diseases, blemishes, bruises and holes, spray burns, limb rub, visible watercore, skin punctures or skin broken at stem, but slight russetting within the basin of the stem shall be permitted.

Fancy Grade—Fancy apples are defined as apples complying with the standard of Extra Fancy Grade, except that slight leaf rubs, scratches, or russetting shall be permitted up to a total of ten per cent of the surface, and provided that scab spots not larger than one-quarter inch in diameter in the aggregate shall be permitted in this grade.

"C" Grade—"C" Grade is to include all other merchantable apples free from infection except apples with bruises in which the skin is broken or bruises larger than one-inch in diameter. Healed stings to be allowed. Apples showing effects of freezing will not be admitted under this grade. Apples of this grade must not be marked "Choice."

Combination Grade—When Extra Fancy and Fancy apples are packed together the boxes must be marked "Combination Extra Fancy and Fancy." When Fancy and "C" Grade apples are packed together the box must be marked "Combination Fancy and 'C' Grades." Combination grades must contain at least 25 per cent of apples which are of such grade as would be permitted in the higher grades. None of the higher grade apples shall be sorted out of any lot and the remainder packed as combination grade.

Orchard Run—When Extra Fancy, Fancy and "C" Grade apples are packed together the boxes must be marked "Orchard Run," but Orchard Run apples must not contain any fruit that will not meet the requirements of "C" Grade. It shall be unlawful to remove any of the higher grade apples from any lot and then pack the remainder as "Orchard Run."

COLOR REQUIREMENTS

Apples shall be admitted to the first and second grades subject to the following color specifications. The percentage stated refers to the area of the surface which must be covered with a clear shade of red characteristic of the variety:

SOLID RED VARIETIES

	Extra	Fancy
Alken Red	75%	25%
Arkansas Black	75%	25%
Baldwin	75%	25%
Black Ben Davis	75%	25%
Detroit Red	75%	25%
Gano	75%	25%
King David	75%	25%
Red June	75%	25%
Spitzenburg Esopus	75%	25%
Spitzenburg Kaign	75%	25%
Vanderpool	75%	25%
Winesap	75%	25%
McIntosh Red	66 2/3%	25%

STRIPED OR PARTIAL RED VARIETIES

	Extra	Fancy
Delicious	66 2/3%	25%
Stayman Winesap	66 2/3%	25%
Black Twig	50%	25%
Ben Davis	50%	15%
Bonum	50%	15%
Fameuse	50%	15%
Geniton	50%	15%
Hubbardston	50%	15%
Jonathan	66 2/3%	25%
Limburtwig	50%	15%
Missouri Pippin	50%	15%
Northern Spy	50%	15%
Ontario	50%	15%
Red Astrachan	50%	15%
Rainier	50%	15%
Rome Beauty	*50%	15%
Salome	50%	15%
Stark	50%	15%
Sutton	50%	15%
Willow Twig	50%	15%
Wagener	50%	15%
Wealthy	50%	15%
York Imperial	50%	15%
Alexander	25%	10%
Chenango	25%	10%
Gravenstein	25%	10%
Jeffries	25%	10%
King	25%	10%

Oldenburg	25%	10%
Shiawassee	25%	10%
Twenty Ounce	25%	10%

* No color requirement on Fancy Rome Beauty 96 and larger.

RED CHEEKED OR BLUSHED VARIETIES

Extra Fancy—Perceptibly blushed cheek.

Fancy—Tinge of color.

Hydes King
Maiden Blush
Red Cheek Pippin

GREEN AND YELLOW VARIETIES

Extra Fancy—Characteristic color.

Fancy—Characteristic color.

Grimes Golden
Yellow Newtown
White Winter Pearmain
Cox's Orange Pippin
Ortley
Yellow Bellefleur
Rhode Island Greening
Winter Banana

SUMMER AND EARLY FALL VARIETIES

Summer varieties such as Astrachan, Bailey's Sweet, Beitigheimer, Duchess, Early Harvest, Red June, Strawberry, Twenty Ounce Pippin, Yellow Transparent and kindred varieties, not otherwise specified in these grading rules, together with early fall varieties such as Alexander, Blue Pearmain, Wolf River, Spokane Beauty, Fall Pippin, Waxen, Tolman Sweet, Sweet Bough and other varieties not provided for in these grading rules, as grown in sections of early maturity, shall be packed and marked in accordance with the grading rules covering Fancy Grade as to defects but regardless of color.

APPLE PACKS

Style of Pack—Diagonal	No. in Box
2x1 wide 4-4 long, 3 tier deep	36
2x1 wide 5-4 long, 3 tier deep	41
2x1 wide 5-5 long, 3 tier deep	45
2x1 wide 6-5 long, 3 tier deep	50
2x2 wide 3-3 long, 4 tier deep	48
2x2 wide 3-4 long, 4 tier deep	56
2x2 wide 4-4 long, 4 tier deep	64
2x2 wide 4-5 long, 4 tier deep	72
2x2 wide 5-5 long, 4 tier deep	80
2x2 wide 5-6 long, 4 tier deep	88
2x2 wide 6-6 long, 4 tier deep	96
2x2 wide 6-7 long, 4 tier deep	104
2x2 wide 7-7 long, 4 tier deep	112
2x3 wide 7-8 long, 4 tier deep	120
2x2 wide 8-8 long, 4 tier deep	128
3x2 wide 4-4 long, 5 tier deep	100
3x2 wide 5-4 long, 5 tier deep	113
3x2 wide 5-5 long, 5 tier deep	125
3x2 wide 6-5 long, 5 tier deep	138
3x2 wide 6-6 long, 5 tier deep	150
3x2 wide 7-6 long, 5 tier deep	163
3x2 wide 7-7 long, 5 tier deep	175
3x2 wide 8-7 long, 5 tier deep	188
3x2 wide 8-8 long, 5 tier deep	200
3x2 wide 9-8 long, 5 tier deep	213
3x2 wide 9-9 long, 5 tier deep	225
3x3 wide 5-5 long, 6 tier deep	180
3x3 wide 5-6 long, 6 tier deep	198
3x3 wide 6-6 long, 6 tier deep	216
3x3 wide 7-6 long, 6 tier deep	234
3x3 wide 7-7 long, 6 tier deep	252
5 straight pack 8 long, 5 tier deep	200
5 straight pack 9 long, 5 tier deep	225

DIMENSIONS OF STANDARD APPLE AND PEAR PACKAGES

The standard size of an apple box shall be 18 inches long, 11½ inches wide, 10½ inches deep, inside measurement.

Pear—18x11½x8½ inches, and outside length 19¾ inches.

¾ inch suitcase pack Peach-Plum—18x11½x3½ inches.

APPLE BOX MATERIALS

Ends—¾x10½x11½, 2 pieces	20 to Bdl.
Sides—¾x10½x19½, 2 pieces	40 to Bdl.
T. & B.—¾x5½x19½, 4 pieces	100 to Bdl.
Cleats—¾x¾x11½, 4 pieces	100 to Bdl.

32 6d nails commonly used per box.

RULES FOR ESTIMATING PAPER AND CARDBOARD

	Apples	Pears
Wraps for packing		
100 boxes	50 lbs.	25 lbs.
Lining for packing		
100 boxes	7½ lbs.	7½ lbs.
Cardboard for packing		
100 boxes	16 lbs.	

RULES FOR USE OF PAPER

Apples—	
Use 8x8 for 188-299-213-225 Packs.	
Use 9x9 for 175-163-150-138-125-113 Packs.	
Use 10x10 for 112-104-100-96-88 Packs.	
Use 11x11 for 80-72-64-56 Packs.	
Use 12x12 for 50-48-41-36-32 Packs.	
Pears—	
Use 8x8 for 210-228-245 Packs.	
Use 9x9 for 193-180-165 Packs.	
Use 10x10 for 150-135-120-110-100 Packs.	
Use 11x11 for 90-80-70-60 Packs.	

CEMENT COATED NAILS

Per keg: 4d, 55,000; 5d, 39,700; 5½d, 31,000; 6d, 23,600.

The Importance of Plant Quarantines

By Charles A. Park, Chairman Western Plant Quarantine Board
Delivered at Meeting of Northwest Horticulturists

THE importance and value to the crop producers of the Pacific Coast, of the inception, the issuance and enforcement of plant quarantine is a matter entirely too comprehensive to be compressed into the space and time allotted to that subject upon the current program, and what is to follow must be recognized and accepted as the merest outline of the purpose, practice and result of the attempts to maintain plant quarantine on the Pacific Coast.

The carefully considered and diligently enforced plant quarantine orders issued by Pacific Coast States up to date, have, in a large measure, resulted in keeping the fruit an dmelon flies out of our orchards and truck farms; in keeping the gypsy and brown-tail moths out of our forests and the blister-rust away from our five leafed pine trees. The Oriental peach moth, now well established in other sections of the United States, has been kept out of the orchards of the Pacific Coast by the application of close quarantine inspection, and the same may be said of the Japanese beetle. The ravages of the chestnut bark disease, the Eastern filbert blight and the European corn-worm, together with the restrictions they cause to be placed upon these crops, are things we read about in the official publications of some of the Eastern states, but thanks to the effect of plant quarantine the producers have no actual experience of these virulent crop pests upon the Pacific Coast. The Mexican cotton-boll weevil and the pink boll-worm of cotton—both introduced insect pests—in addition to greatly reducing the annual output of this staple, are causing the issuance of the most drastic and far-reaching federal and state laws, rules and regulations directed against the cultivation and movement of

the cotton plant and its various products. The cotton fields of the Pacific Coast states are clean and free of both of these pests, and also free of the burden and loss that would surely follow their introduction and establishment. The sweet potato weevil has

not as yet become established on the Pacific Coast, yet the pest is a regular immigrant and a common acquaintance of the quarantine inspector. The potato wart disease still remains with one exception, in its native habitat, and finally our knowledge of the citrus canker, the most destructive scourge of the citrus industry, is still confined to what we read in the official bulletins of the state of Florida.

A Dependable Ladder

Made of clear well seasoned spruce, it is light and strong.



THE HARDIE

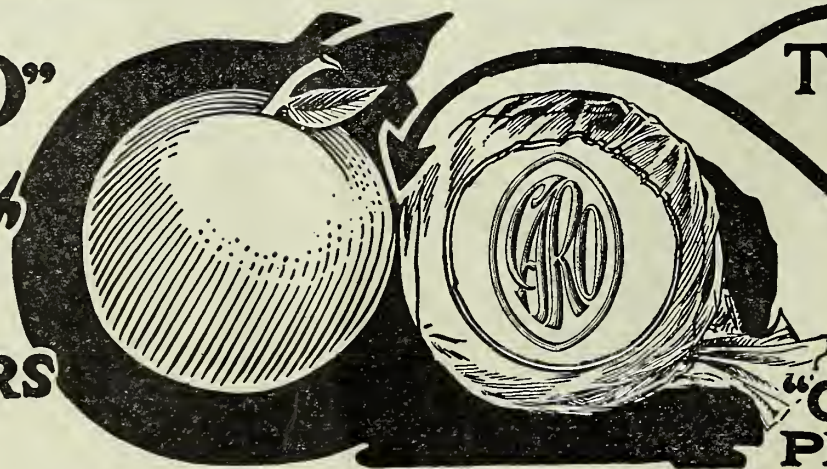
Designed especially for orchard work with wide spreading side legs and a rod reinforcement under each step. This strong, rigid construction gives your picker confidence and a wider range of picking. Its use soon saves its cost. Hardie ladders and other orchard devices are fully described in our free catalog, which is mailed on request.

The Hardie Manufacturing Co.

55 N. Front Street

Portland, Oregon

"CARO"
fruit
WRAPPERS



This
is the
POINT

"CARO"
PROTECTS

"Caro" Protects—"Caro" Prolongs the Life of Fruit—Why?

CHEMICALLY TREATED, "Caro" from DessiCARE (to dry up)

FRUIT MATURITY is retarded by cold or refrigeration and hastened by heat or atmospheric exposure.

The soft fibrous silk-like texture of "Caro" provides just sufficient ventilation to retard the ripening process.

FRUIT DECOMPOSITION starts from a bruise which opens tiny holes and permits juice to escape and BACTERIA to enter. "Caro" clings closely and dries up the escaping juice. "Caro" ingredients harden the spot, kill the BACTERIA, arrest the decomposition.

United States Distributors, AMERICAN SALES AGENCIES CO., 112 Market Street, San Francisco, California

ALL of the above mentioned crop pests except the fruit flies have become well established in the United States east of the Rocky mountains, and were introduced into that territory before the adoption and enforcement of plant quarantine regulations by the several states concerned. Not one of the above mentioned crop pests has become established in the Pacific Coast states, yet since the inauguration and enforcement of plant quarantine regulations on this coast each and all of these crop pests with the one exception of the European corn-worm have been repeatedly intercepted in imports of plant products and destroyed by the local plant quarantine inspectors.

The true value of plant quarantines to the crop producers of the Pacific Coast can be summed up in the following simple sentence. The present unchallenged entrance of our crop products into the markets of the world. Such an enviable condition is by no means common to the crop producers of the world at large; in fact, it constitutes a very rare exception.

CONSIDER the alternatives. The markets of the world promptly closed to our entire fruit crop. The introduction and establishment on the Pacific Coast of the Mediterranean fruit fly would be sufficient cause to create such a situation. If this omnivorous pest should gain an entrance, either by accident or laxity in enforcing quarantine regulations, every fruit growing state in the Union and all other fruit growing countries would promptly apply, in fact would be compelled to apply, for their own protection, the same prohibitive regulations against the importing or bringing into or through their territories of all of our fresh fruits, as are now in force and enforced against the territory of Hawaii and other countries infested with this pest.

Any serious contemplation of the possibilities of evil or loss that would promptly result from the establishment of the insect pests and plant diseases enumerated in this address, in the farms, forests and fields of the Pacific Coast, should be preceded by a thorough acquaintance with the actual financial loss to the crop producers of the countries in which the same have been permitted to gain an entrance and establish a residence. The natural deductions from such a study would, we believe, bring about a clearer, better recognition of the value of efficient quarantine work and a concerted determination to maintain, develop and support the same.

Economy in the use of irrigation water on sandy soils is effected by good soil management and by the strip border method of application. At the Umatilla, Oregon, branch experiment station H. K. Dean, superintendent, reduced the duty of water from 9.7 acre-feet to 4.7 acre-feet last year. This stretches the water for one acre at first to more than enough for two acres later, without loss of yield.



Paint Economy Isn't "Cost Per Gallon"

THERE'S one way only to save on paint. That way is to use the best of paint.

Some think of paint economy as "cost per gallon." That is wrong.

Cheap paint doesn't cover as much surface—you need *more gallons*.

Cheap paint is more difficult to spread, requires more labor, so the best paint costs you no more when you've put it on the house or barn than cheap paint does.

More than that, it lasts five or more years, if properly applied, while cheap paint, on the average, begins cracking in twelve months. Good paint is an *investment* that saves money by preventing deterioration.

"Cheap" paint is the only paint that really *costs*. Don't allow surfaces to rot. It costs less to paint them.

We've made paints for western use for 72 years. We use the best materials—pure PIONEER WHITE LEAD, pure linseed oil, zinc and color, but we mix them in scientifically exact proportions with long-time skill.

Our white-lead base must be fine enough to pass through a silk screen with 40,000 meshes to the square inch. That means covering capacity and ease of spread. We super-purify the lead to make it "whiter," which means clearer-toned colors.

The finished product on the house or barn is an elastic, tough, protective coating.

We call these paints "Fuller's Specification Farm Paints" because they are the very best made for the purpose.



Fuller's SPECIFICATION Farm Paints

House Paint - Barn & Roof Paint
Wagon Paint - Rubber Cement Floor Paint

M'd. by W. P. Fuller & Co.

Pioneer Manufacturers of Paints, Varnishes, Enamels, Stains and
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Mail Coupon

Send coupon for free book, "Save the Surface," which tells of the vital importance of good paint. Also get our small booklet of Fuller's Specification Farm Paints.

Both books will help you in selecting the right paint for your needs. Mail coupon now.

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Please send me, without charge, a copy of "Save the Surface" and your small booklet of farm paints and varnishes.

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City..... State.....

For all exterior jobs of painting it is advisable to obtain the services of a Master Painter

Applying the Spray for Anthracnose

By M. D. Armstrong, County Fruit Inspector Hood River County

ANTHRACNOSE SERIOUS

The rapid spread of anthracnose in the Northwest during the past year makes it necessary for growers to take every precaution against it this fall before wet weather comes on. Where orchards have not received the August or early fall application they should be sprayed just as soon as the apples are picked and every part of the bark surface on the tree covered. The proportions of Bordeaux to use are 4-4-50 for the early fall spray and 6-6-50 for the delayed fall or winter spray. If lime and sulphur is used the proportions should be 1-8. Growers who will apply Bordeaux for anthracnose will find Mr. Armstrong's recommendations both a time and labor saver.—Editor.

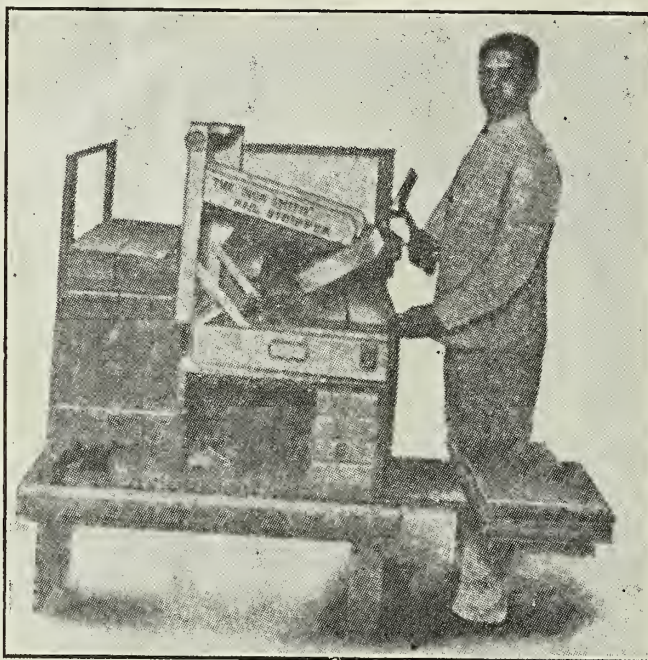
THE preparation and application of the Bordeaux spray is one of the disagreeable sprays that the growers have and to save time and patience, materials and methods for its preparation should be as convenient as possible. For large orchards perhaps the most convenient plan is to have two elevated tanks at such a height that their contents can be run into the spray tanks where the lime can be slacked and the to fill quickly. The arrangement necessitates a platform level with the top of the tanks where the lime can be slaked and the vitriol dissolved in other tanks or barrels and then easily run off into the tanks for the diluted solutions. Where two machines are at work, one man can be employed constantly mixing and making ready the solutions, so that all the sprayers have to do is to drive under the pipes and run an equal amount of the lime and vitriol water into the tanks with the agitators running.

For the small orchard the equipment need not be so extensive and as the most trouble comes in the proper preparation of the lime this operation should have careful attention. Much time can be saved if a large mortar box is provided in which a considerable amount of lime can be slacked at once. The amount will depend on the size of the orchard and will be from one to four or more barrels, according to the amount used in a day. The box will have to be built to suit the amount of lime needed and should be large enough so that the mortar will not be over 8 or 10 inches deep. Plenty of water should be used and care taken that the lime is not burned. If two or more barrels are to be slacked it should not all be slacked at once as a smaller amount can be better stirred. The box should be set level and the number of pounds of lime used should be known. After the lime is thoroughly slacked, which will not be in less than a week, the surplus

water can be drained off and the mortar checked off into squares so that each block will represent the number of pounds of

lime required to make a tank of spray. The best grade of lime should be used, and if slacked several days ahead of time, all particles will be slacked down to a paste and be easily put through the strainer into the tank. In mixing the vitriol and lime water

THE DICK SMITH NAIL STRIPPER



SELF-FEEDING ADJUSTABLE
FOR 2d TO 10d NAILS

This stripper is a revelation in rapidly stripping, or heading nails, and is, without question, the greatest help to the practical box maker. It is intended to be used in handling nails from 2d to 10d.

One of the great advantages of the SMITH is its adjustable feature. By the adjustment of thumb screws the stripper can accommodate nails from 2d to 10d equally well.

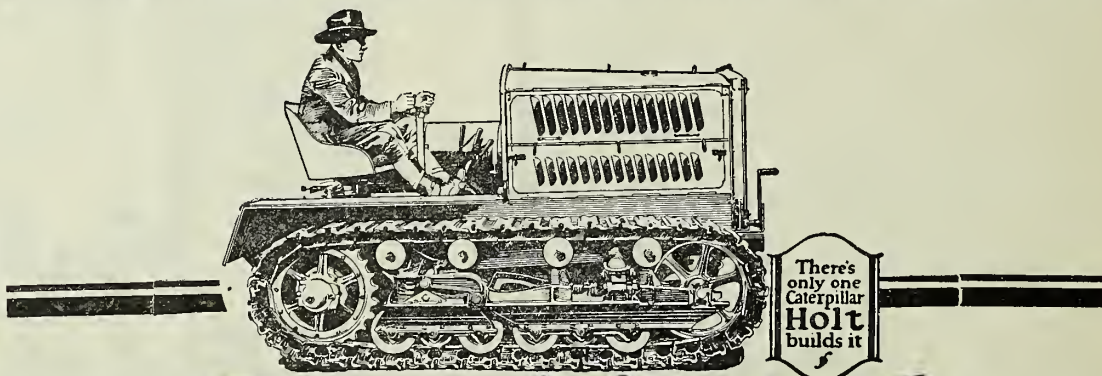
When not in use, it can be closed like a small suit case, measuring 5 by 10 by 19 inches, and weighing but 10 pounds.

Ask your local dealer for a demonstration or write

DICK SMITH

Sole Manufacturer

912 W. 37th Pl. Los Angeles



Dependability
the
dominating feature
of "Caterpillar" Tractors
The **HOLT**

MANUFACTURING COMPANY

Stockton, California

Peoria, Illinois

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Spokane, Wash.

San Francisco, Cal.

the lime should be put into the tank first unless both can be run together. The tank should be then well filled with water before the vitriol water is added. The agitator should run continuously while the tank is being filled and until it is sprayed out. The vitriol water should be stirred before being put into the tank, as the strongest solution is always at the bottom of the barrel.

The Value of Fairs

FAIRS will play a more important part in an industrial way in the Northwest this year than formerly. The value of community, county, state and interstate fairs as an asset to both the business man and producer is gaining wider recognition and those communities which will not hold fairs or an exhibition of some kind this year are planning something of the kind in future. This awakened interest in fairs is of great importance in the industrial life of community, county and state as it indicates active public spirit and enterprise. It stimulates better production of orchard, farm and garden produce, engenders community spirit and advertises the superiority of certain sections to produce certain products, as well as those who produced them.

To dispose of farm products as well as manufactured goods to the best advantage, they must be talked about. The fair provides the best medium for this purpose. The excellence of community products and the special lines in which various individuals excel are brought out and the benefits that are attained are many fold.

In holding a fair it should be advertised extensively. This should be done by a well organized publicity committee which should leave no stone unturned to create interest in the forthcoming event.

A Valuable Book

"The Commercial Apple Industry of North America"

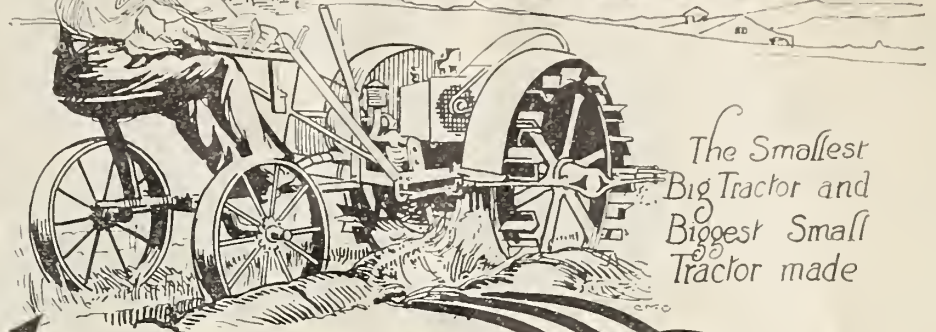
Published by the Macmillan Company is a new book covering all phases of the Apple Growing Industry that *Better Fruit* highly recommends to apple growers or those who contemplate engaging in this occupation. Its authors are J. C. Folger, Assistant Secretary International Apple Shippers' Association and S. M. Thompson, formerly Fruit Crop Specialist, U. S. Department of Agriculture. It is edited by L. H. Bailey, the well known authority on horticulture.

If you are interested in obtaining a copy of this valuable book send us \$3.50 and we will have same forwarded to you. Remit by postoffice money order or check to

Better Fruit Publishing Company

Twelfth and Jefferson Streets
Portland, Oregon

A One-Man-Tractor on a One-Man-Farm



*The Smallest
Big Tractor and
Biggest Small
Tractor made*

THE Oldsmar Tractor is built to meet both the purse and purpose of the progressive farmer on a small farm.

Designed and manufactured by R. E. Olds, famous in the automotive industry, the Oldsmar is the all-season, all purpose tractor.

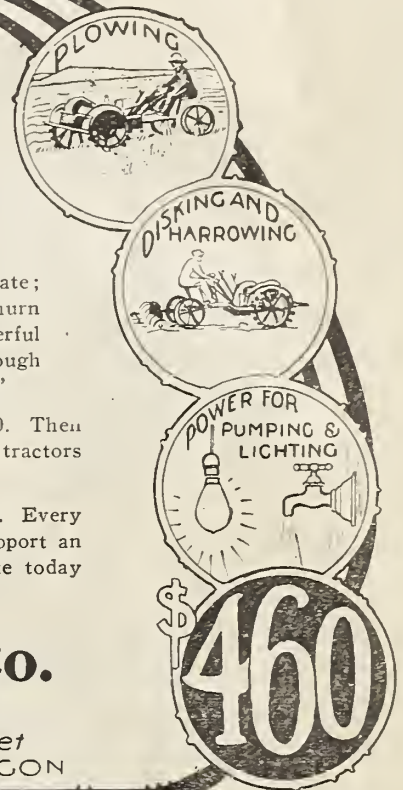
It will plow, disc, harrow and cultivate; run an electric plant, cream separator, churn or other farm equipment. It's powerful enough for hard work and economical enough for light work. And it stands the "gaff."

Consider the price of the Oldsmar, \$460. Then make your comparisons with all other tractors offered.

Your territory may be open, Mr. Dealer. Every small farm's a prospect. Any farm can support an Oldsmar; any farmer can afford it. Write today for catalog, information and terms.

O. V. Badley Co.

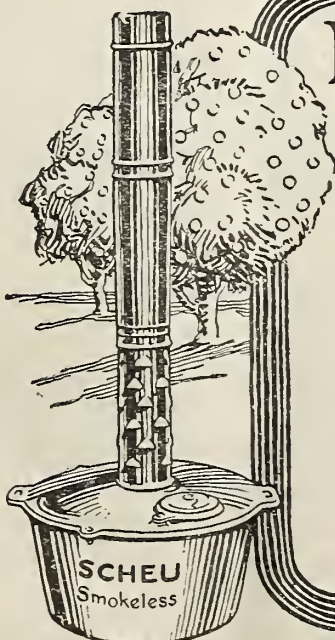
DISTRIBUTORS
425 East Morrison Street
PORTLAND OREGON



FREE An Empire Plow free to the first person buying an Oldsmar Tractor in each community. Don't fail to see this tractor on demonstration at the OREGON STATE FAIR, Salem, Oregon, September 26 to October 1.

MULTNOMAH COUNTY FAIR

GRESHAM, OREGON, SEPTEMBER 19-24



Frost Insurance

\$1.15 per hour per acre

"Used 27 Scheu Heaters to acre on the night of April 25, 1921—temperature outside of orchard 23° raised to 30° and 31° inside. I have a full crop in area covered by the heaters," writes W. C. Stone, Prop. Squaw Butte Orchards, Emmett, Idaho.

Scheu Smokeless and Canco Heaters

Give positive protection. Operating cost \$1.15 per acre per hour. Temperature as low as 16° successfully raised above danger point. Used by growers the country over. More than a million Scheu and Canco heaters now in use. Heaters cost 36c np. Order early to get frost protection next spring.

Write for free 48 page book—"Frost Insurance." Resident agents wanted.

Orchard Heater Dept. C
WHITING-MEAD COM'L. CO., LOS ANGELES



BETTER FRUIT

Published Monthly
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Agricultural Credits

More adequate farm credits, lower freight rates, deflation of labor costs, reduction in prices to the consumer and a more equitable adjustment of the tax burden were recently pointed out by Charles E. Gunnels, treasurer of the American Farm Bureau Federation as the foremost problems that must be solved to secure a proper return to normalcy. We agree with Mr. Gunnels that the problems enumerated are among the most important that must be adjusted to bring economic prosperity and stability. Action, however, that has or will be taken is expected to bring relief along these lines, with the exception of providing a permanent and more expansive form of agricultural credits.

While the relief bill to aid the farmer in the matter of credits recently passed by congress should prove highly beneficial its provisions do not make it part of the permanent banking institutions of the country.

What the agriculturists of the country need is an expansion of the operations of the credit provisions

of the Federal Reserve banking system. It is to the bank that the farmer or the fruit grower turns and will turn when he is in need of credit. Why then should it not be made available to him through the nearest and most convenient source?

Representing more than one-third of the wealth of the nation and estimated as an 80 billion dollar industry, the Federal Reserve reports show that less than 30 million dollars worth of agricultural paper was handled by this big banking system in 1920. Why? Because the provisions of the Reserve Banking system surrounding the extension of credit to agriculture are too stringent and cumbersome.

Congress has enacted special legislation to give the agricultural producer credit relief. Why not, therefore, have the provisions of this measure incorporated as part of the Federal Reserve Banking act. Instead of making the aid of this powerful financial agency so difficult for agriculture to reach why not bring it nearer to the industry that constitutes the strongest pillar in its structure?

Optimism

It takes considerable courage to look a financial slump in the face and smile. A quitter cannot. A winner always does. Not that the situation is not just as serious for him. Possibly the smile is no deeper than the surface. He may really believe the financial wound to be mortal, but if he meets it with the grim determination that smiles and will not admit defeat, even when it appears a reality, he has within him a reserve power which may pull him out of the hole.

The fatalist who looks upon bad luck as foreordained and believes good fortune will come only if the powers so will it, is not a successful man. He lacks the very germ from which success springs.

It is not optimism to don a silly grin, meet every excuse with the vacant comment, "Well, it can't get much worse!" and sit down to wait

for something better or worse to happen.

The true optimist is he who believes in himself, refuses to give up, and when ill fortune visits him, rolls up his shirt-sleeves, takes a hitch in his belt, smiles grimly, and plunges into the task ahead determined to blaze a path out of his difficulties.

An object lesson to the fruit grower who may become discouraged and decide to throw up the sponge is the brief story of an Oregon apple grower, who last fall, lost faith and tried to sell his orchard property including his home and all he possessed for \$19,000. Unable to do so he was forced to hang on and this year sold the apple crop on his place for \$28,000 or \$9,000 more than the valuation he had placed on it last year.

The fruit grower who neglects his trees or sells his orchard because of one unprofitable year, will never be successful in any endeavor. But the fruit man who sees the tremendous possibilities in the industry in the Pacific Northwest and recognizes the readjustment period as a financial stomach-ache which cannot last long and which may leave matters in a more sound condition than before the attack, will be the successful grower of the future.

Our Markets Abroad

While a tariff on fruits will aid the American producer in removing foreign competition and raising prices, the schedule should not be made so high and so sweeping as to cause a restriction in the sale of our products abroad. It should be remembered that the United States produces a surplus of most agricultural products and to market them successfully it must have outlets abroad. To secure the best results the part of wisdom will be to adopt a give and take policy rather than erecting a tariff wall so high that producers in foreign countries will be cut off from an income that they would spend in buying American products. In short, to prosper ourselves, we must, to some extent, allow our competitors to prosper also.

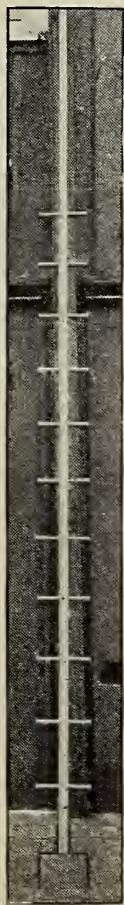
Northwest Fruit Fair Organized

THE Pacific Northwest Fruit Exposition, a project for the purpose of more widely advertising and distributing the fruits of the Northwest was organized during the past month in Seattle and will be incorporated under the Washington state laws providing for agricultural fairs. The exposition will be held in the Seattle Port Commission's Bell street terminal in November. Exhibits will be solicited from the various fruitgrowing districts of the Northwest and a program prepared which will include lectures to growers by experts in horticulture, packing, transportation and other features of interest.

The officers of the new organization are: J. A. Gellatly, Wenatchee, president; E. H. Pride, Bellingham, vice-president; O. C. Soots of Yakima, executive secretary. The board of governors named includes the following:

S. J. Harrison, Benton; William Greig, Cashmere; John W. Langdon, Walla Walla; M. J. Newhouse, Vancouver, Wash.; C. I. Lewis, Salem, Ore.; W. H. Paulhamus, Sumner; W. C. Mumaw, Aberdeen; F. B. Wright, Everett; George W. Dilling and R. H. Parsons, Seattle; R. T. Reid, Bellview; H. M. Gilbert, Yakima; R. O. Kylan, Zillah; Farwell Morris, Grandview; W. P. Romans, Spokane; Paul H. Weyrauch, Walla Walla; A. W. Stone, Hood River; J. R. Everett, Okanogan; Geo. W. Lee, Omak.

Pond's Centipede Ladder



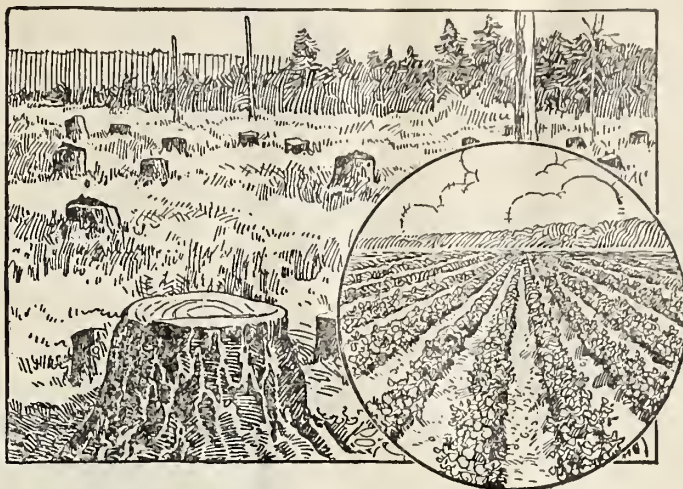
Ask your implement dealer to show you the latest invention in ladders for use in high trees. Made of iron, Oak and clear Douglas fir. Tall, strong, light weight, rigid, stable and reasonably priced, the last word in ladder efficiency. In tall trees it will cut your picking costs in half. Descriptive circular on request.

Ask your dealer for a demonstration.

RUSSELL G. POND
(Forest Engineer)

Inventor and Shipper of
Pond Products

Parkdale, Hood River, Ore.



Make
YOUR
Idle
Acres
Yield
Profitable
Crops

Make These Idle Acres Work for YOU!

EVERY farm has its busy acres yielding profitable crops and its idle acres where stumps, boulders and swamps produce only expensive tax bills. Progressive farmers are adding year by year to their profit-paying acres by reclaiming their idle waste land through the use of



STUMPING POWDERS

Every "stick" is of uniform quality and the best results are assured because these powders are made especially to meet the needs of land-clearing in this section.

Bear in mind an acre cleared or drained adds a permanent income to your farm business.

Send for a free copy of book entitled "Development of Logged-off Lands" telling how to use explosives for land clearing, ditching and tree-planting.

E. I. DU PONT DE NEMOURS & CO., INC.

Portland, Ore., Seattle, Wash., Spokane, Wash.

Orchard for Sale!

23½ Acres in beautiful White Salmon Valley, Washington, 3 miles from town. 13 Acres in Yellow Newtowns and Spitzenbergs, 12 and 14 years old, with proper pollenizers. Fine home orchard of 40 trees—every variety of fruit which will grow in the locality. Fine spring just east of the place, with flow enough to supply several places. Price \$4,000.00—reasonable terms for quick sale.

Address C. I. M. care BETTER FRUIT

Advertising Northwest Apples Planned

A MOVEMENT that has been under way for some time by leaders in apple marketing to advertise Northwest apples, regardless of brand has been launched and is expected to take definite shape shortly.

The plan that it is hoped will be worked out is to have enough apple handling agencies and organizations in the Northwest get together and appropriate one cent a box this fall so that a substantial fund can be raised to advertise the superiority of Northwest apples during the heavy buying season this year. It is believed by the committee which has the campaign in charge that with a light apple crop in the East the time was never more opportune to advertise box apples and create new markets in territory heretofore untouched.

Should a sufficient fund be raised to carry out the work it is planned to use a system of advertising that will not only direct the attention of the public to the better quality of box apples, but educate it to the fact that fruit is not a luxury, but a food.

Apples shipped from the Pacific-Northwest have a wider distribution than any other commodity shipped from one section. Reports to the United States Department of Agriculture from public carriers for the last five years show that 2,567 cities were used as primary destinations. Telegraphic reports from railroads during the season of 1919-20 showed that about 1,400 cities received carlot shipments from the Pacific-Northwest.

For **LILLY'S** Fall Fertilizing

NITRATE OF SODA

15 per cent Ammonia

SULFATE of AMMONIA

25 per cent Ammonia

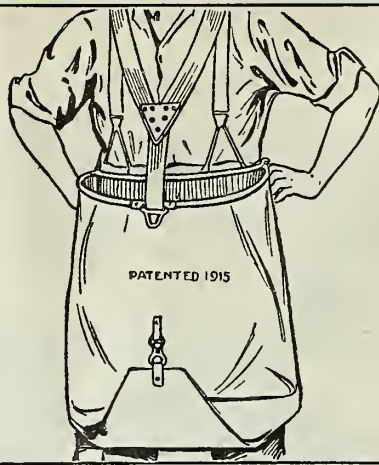
New Supplies

New Prices

We recommend Sulfate of Ammonia as furnishing a better and cheaper form of Ammonia.

Write for prices on car lots or less to

LILLY'S SEATTLE



"WENATCHEE" FRUIT AND VEGETABLE

PICKING BAG

(Carpenter's Patent)

Made of heavy canvas, reinforced with leather, stitched with waxed harness thread, to a steel frame. Halter webb carries the load from the shoulders as suspenders. These patented features make it so popular, serviceable, practical and labor-saving.

Send for Sample, \$2.50 Postpaid.
Special Prices to Quantity Buyers

C. A. CARPENTER

3837 35th Ave. S. W. SEATTLE, WASH.
Also write the Manufacturers and Distributors
SCHAEFFER & ROSSUM CO.
ST. PAUL, MINNESOTA



Buy a pipe—and some P. A. Get the joy that's due you!

We print it right here that if you don't know the "feel" and the friendship of a joy'us jimmy pipe—GO GET ONE! And—get some Prince Albert and bang a howdy-do on the big smoke-gong!

For Prince Albert's quality—flavor—coolness—fragrance—is in a class of its own! You never tasted such tobacco! Why—figure out what it alone means to your tongue and temper when we tell you that Prince Albert can't bite, can't parch! Our exclusive patented process fixes that!

Prince Albert is a revelation in a makin's cigarette! It rolls easily and stays put because it's crimp cut! Oh, go on! Get the papers or a pipe—and some P. A.!

Prince Albert is sold in toppy red bags, tidy red tins, handsome pound and half pound tin humidors and in the pound crystal glass humidor with sponge moistener top.



Copyright 1921 by
R. J. Reynolds
Tobacco Co.
Winston-Salem, N. C.

PRINCE
the
national
joy
smoke
ALBERT

Making Box Apples Safe

(Continued from page 7)

heavy apple boxes properly nailed. Good boxes and undamaged fruit will always bring better prices, which justifies the slight care and expense in starting shipments right.

Hood River district of Oregon this year will have about 2,000,000 boxes of apples. Walla Walla shippers and the Yakima district of Washington will use about 12,000,000 boxes and the Wenatchee Valley around 12,000,000. The Inland Empire shippers will handle about 5,000,000, which is less than normal for that section. The Underwood-White Salmon district and the rest of Washington are figured as requiring about 1,000,000 boxes this year.

**BEST SERVICE -
QUALITY & PRICES**

**PERFECTION IN
FRUIT
LABELS**

**THE
SIMPSON & DOELLER CO.**
1423-24 NORTHWESTERN BANK BLDG.
PORTLAND, OREGON.
E. SHELLEY MORGAN
NORTHWESTERN MANAGER

WE CARRY - AND CAN SHIP IN 24
HOURS - STOCK LABELS FOR PEARS,
APPLES, CHERRIES & STRAWBERRIES



Growers' and Packers' Equipment

We Manufacture:

	LADDERS
	BOX PRESSES
	PACKING CHAIRS
	BOX-MAKING BENCHES and
	AUTOMATIC ELEVATORS all
	GRAVITY & POWER CONVEYOR kinds
	POTATO GRADERS AND SIZERS of
	PRICE FRUIT SORTERS AND SIZERS Special
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PRICE "PRICE PRODUCTS"

Before You Buy Others

We maintain a consulting department which will be very glad to advise with you in planning the installation of equipment for your packing house or warehouse.

Illustrated Booklets and Price List on Request

Fruit Appliance Company

Successors to

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204 Franklin Street, New York

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SIMONS, SHUTTLEWORTH, WEBLING CO.
12 South Market Street, Boston

OUR SPECIALTIES ARE APPLES AND PEARS

Picking for Flavor

(Continued from page 9)

hand, if the season is unusually short and the fruit does not have time to develop fully, the acid content, which naturally decreases through all the stages of development, will be high.

While the time of picking fruit for flavor may not always agree with the time for maximum keeping quality, yet in most cases the two should be considered together. The greater percentage of apples are held in storage, or at least under storage conditions, for periods of varying lengths. Some may only be held a few weeks, while others are kept from one year to the next. In either case the keeping quality will be reflected in the flavor of the fruit. Storage troubles may be divided into those which affect the external appearance of the fruit, generally spoken of as skin blemishes and those that injure the flesh, known as decay.

The most important skin blemishes are the ordinary and soft scalds and the Jonathan spot. The decays include the physiological or natural decay, and the various fungus or bacterial decays. Scald is the most prevalent and is recognized by the familiar characteristic browning of the skin. While in the case of ordinary scald this does not extend into the flesh, it greatly lessens the commercial value, and in cases where the scald is serious it may weaken the skin to such an extent that complete physiological decay may result. While affecting Jonathans principally, Jonathan spot is one of the most important skin blemishes. It first appears as small round, brown or black spots about one-sixteenth of an inch in diameter, or in some cases simply as indistinct, very dark red to black splotches. In later stages these spots may enlarge somewhat and become slightly sunken.

(To be concluded in October number)

Decrease in Number of Fruit Trees

A RECENT bulletin of the United States Census Bureau shows that the Pacific Coast is the only section of the country that has had an increase in the number of bearing apple trees during the ten years between 1910 and 1920. During this period the number of bearing trees in the coast states has nearly doubled in num-

ber. The bulletin also shows that there are not one-third as many young apple trees that are not in full bearing as there were ten years ago. These figures indicate that although the Pacific Coast states lead the country in the increase in the number of

A Banking Service for the Horticulturist

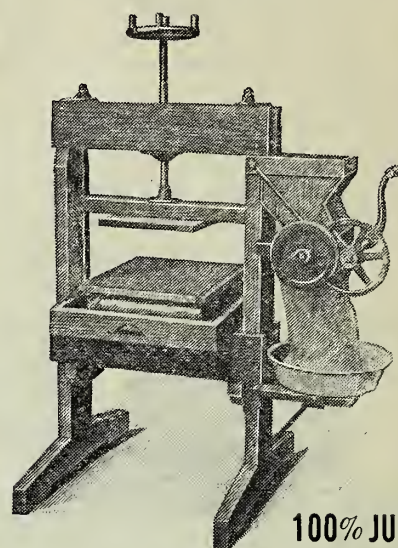
A complete banking service is offered you through our various departments.

Our officers welcome the opportunity of advising you how best to use these departments. Or a little booklet outlining the functions of each department may be had from the tellers upon request.

The
First National Bank
OF PORTLAND, OREGON

The first national bank west of the Rocky Mountains

Orchard Queen Cider Mill



100% JUICE

It doesn't crush the apples, but grates or grinds them, breaking the juice cells so that when the pomace is pressed in the sanitary cloth sacks, all of the juice is extracted.

Orchard Queen is the simplest, easiest operated, cleanliest and most efficient of cider mills. No metal in cylinder or hopper to discolor juice. Operated by hand or power. Made in two sizes. Our folder explains in detail the construction and operation of the Orchard Queen Mill. Write for it.

Puffer-Hubbard
Manufacturing Co.

3203 East 26th St. Minneapolis, Minn.

MYERS SELF-OILING POWER PUMPS

For General Service in the Home or on the Farm

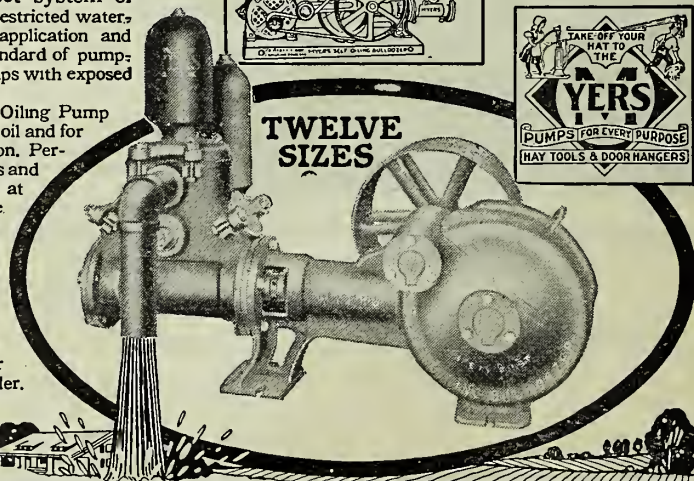
Modernize your home and farm—have plenty of running water wherever and whenever needed—install a MYERS SELF-OILING BULLDOZER POWER PUMP—the only pump manufactured today with covered working parts, a perfect system of self-lubrication, extra large valves, unrestricted waterways, improved method of power application and other refinements which provide a standard of pumping service unequalled by old style pumps with exposed gears and antiquated oiling systems.

Fill the reservoir of a Myers Self-Oiling Pump occasionally with any good lubricating oil and for weeks it will require no further attention. Perfect lubrication, enclosed working parts and other improvements permit operation at high speed or against heavy pressure greatly increase the capacity, minimize wear and breakage, prevent accidents, and insure economical, long time service.

Sizes and styles for shallow or deep wells. Capacities from 500 to 9000 gallons per hour. Operation by motor, gasoline engine or other power. Write for literature, or ask your dealer.



TWELVE SIZES



THE F.E. MYERS & BRO. CO. NO. ORANGE ST.
ASHLAND OHIO.
—ASHLAND PUMP AND HAY TOOL WORKS—

Pacific Northwest
Distributors

Mitchell
LEWIS & STAVELAND CO.

Spokane, Wash.
Portland, Oregon

BUY FROM THE LOCAL MITCHELL DEALER

MAKE YOUR SOIL YIELD MORE. USE TORO BRAND



This has increased crops up to 500 per cent. It prevents wire worms, smutty grain and potato scab. For Lime-Sulphur Solution use DIAMOND "S" BRAND REFINED FLOUR SULPHUR. For dry dusting use ANCHOR BRAND VELVET FLOWERS OF SULPHUR. Against rodents use CARBON BISULPHIDE. Write for circulars 6, 7 and 8, price list and samples.

SAN FRANCISCO SULPHUR CO.
624 California Street
SAN FRANCISCO, CAL.

apple trees coming into bearing that the maximum planting of trees reached its peak ten years ago and has declined each year since.

According to the census figures the decrease in the number of bearing apple trees in the United States during the past decade has been 36,057,811 or 28.8 per cent, and the decrease in the number of young trees not yet of bearing age has been 45 per cent. The number of bearing peach trees during this same period decreased 28,881,736, or 30.5 per cent.

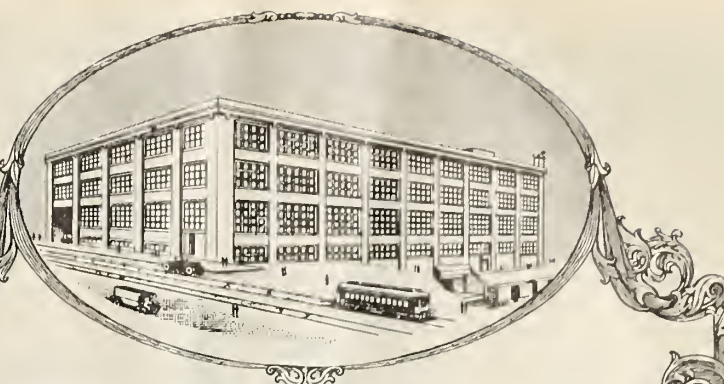
Packing House Needs

(Continued from page 9)

lem. Those who contemplate the construction of new houses or desire to improve their equipment and methods of operation may secure copies of the bulletin and additional information upon application to the United States Department of Agriculture, Washington, D. C.

A CORRECTION

THROUGH a typographical error the price of a pair of the box handles which are being put out by the Box Handle Company of Seattle, Wash., was made to read \$3.50 in one place in their adv., in the August issue and \$5.00 in another. The correct price in both instances should have read \$3.50.



F.C. Stettler Mfg Co.
Portland — Oregon

Lithographers

Color Printers

Labels

Cartons

Folding Boxes

Cut Outs

Display Cards

Special Advertising

Stiff Boxes Plain and Fancy



THE OLD WAY; THE NEW

The Box Handle Company

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The man who works in the orchard can only pick up one box at a time and it is some strain to pick the box up from the ground. With a pair of handles he picks up two boxes and carries them with ease. He is not half so tired when night comes, and does as much work as two men, which cuts your labor down.

The apple season is short at the best. You don't lose any apples out of the box by using the handles. You get a better percentage of packing because the apples are not bruised by using box handles.

This handle will lift any size box from 15 to 22 inches long. Every rancher who owns a ranch from 10 to 50 acres should have from 1 to 12 pairs of handles.

Your stomach won't be sore or your back lame when night comes if you will use the box handles.

The prices are \$2.00 for one handle or \$3.50 for a pair.

After you have used a pair for one day, you wouldn't take \$20.00 for them if you couldn't get another pair. Don't let this opportunity get away. Buy now. Send us \$3.50 and let us send you one pair by Parcel Post. We feel satisfied that you will buy more if you need them.

The Box Handle Company

800 First Avenue, South
SEATTLE, WASH.

Northwest Notes From Here and There

DOUGLAS county will be the banner section in Willamette valley this year in the production of dried prunes, according to official estimates. The output in Douglas county is placed at 7,500,000 pounds. The Polk county output is given at 2,000,000 pounds; Marion county, 1,500,000 pounds; Yamhill county, 2,500,000 pounds; Lane county, 1,500,000 pounds. Umatilla county, with an estimated output of 2,000,000 pounds, for the first time becomes a larger factor in the dried prune market this year than several of the Western Oregon prune-producing counties. The total production of dried prunes in Oregon this year is estimated by F. L. Kent, statistician of the U. S. Bureau of Markets, to be 21,610,000 pounds or less than one-half of the tonnage forecasted early in the season.

OUTSIDE of Hood River county the largest apple crop that will be produced this year will come from Jackson county which will ship 900 cars. Jackson county will lead the state in pear production with an estimated shipment of 4,500 tons for the season.

ESTIMATES made by the fruit growers of the Calapooia River valley are to the effect that before the season closes 450,000 pounds of berries will have been produced in that section. These figures do not include the large quantity of berries appropriated for family use. Two hundred and twenty-five tons of the berries were shipped to the cannery at Eugene.

WITH the increase in apple production in the Hood River valley the Apple Growers' Association has found it necessary to add to its warehouse capacity and is building storage houses at Odell and Dee. The new structure at Odell will be one story high, 130x60 feet. It will be built of tile and will cost \$11,000. The Dee plant, which will be constructed of wood, will be 120x50 feet and cost \$8,000.

AT \$40 a ton prune growers in the Ontario district of Eastern Oregon have made several contracts and state that they are satisfied with this price. Limited apple sales that have taken place in this district show prices of \$40 to \$75 a ton with Delicious showing the highest quotation.

ONE of the largest peach crops produced in Oregon this year was raised in the orchard of Alex LaFollette, in Marion county. The output from the LaFollette orchards was 12,000 boxes, which sold for an average of \$1 per box. Two years ago the crop of peaches from the LaFollette orchards totalled 18,000 boxes. It is one of the few large peach orchards in the state that was not injured to any extent by the 1919 freeze.

TOTAL production figures for the loganberry season which recently closed in the Willamette valley are 53,000 tons or 10,600,000 pounds. The output in 1920 was 7,800,000 pounds, the increase this year being due to a much larger acreage coming into bearing and heavier yields. The value of this year's loganberry crop in the Willamette valley is placed at \$325,000. In commenting on the increase in the loganberry

tonnage in the Willamette valley and average prices extending over a period of six years Fred G. Schmidt of the Northwest Fruit Products Company of Salem, says that the average price received by growers since 1915 is about 5½ cents a pound. Mr. Schmidt points out that in 1915 the average price was 1¾ cents a pound; in 1916, 3 cents a pound; in 1917, 3½ cents a pound and in 1918, 5 cents a pound. In 1919 the price took a pronounced jump to 9 cents a pound, and in 1920 reached its highest mark at 13 cents. This year the average price ran about 3¼ cents a pound.

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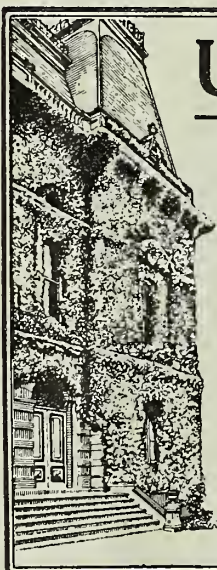
TECHNOLOGY

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FALL TERM OPENS SEPT. 19, 1921

For information write to the Registrar

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The School of Architecture and Allied Arts.	The School of Journalism.
The School of Business Administration.	The School of Law.
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	The School of Sociology.

Fall Term Opens September 26

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AN apple crop worth \$600,000 in Union county is the present estimate following a careful inspection in the various apple belts of the county made by men familiar with crop conditions in that section. The crop, which is reported to be of fine quality will total 500 cars.

WASHINGTON

EARL S. COE and Fred Baker, White Salmon orchardists, have entered the apple marketing business and have begun the construction of a warehouse. An estimate of the apple production in the districts in which they will operate this year gives the following output: Goldendale, 50 cars; Lyle, 100 cars; White Salmon, 400 cars, and Underwood, 275 cars.

THE North Pacific Co-operative Berry Growers, an organization representing the communities in Kitsap county, Bainbridge Islands, Ollala, Jefferson county, Grays Harbor, Sunnyside, Snohomish and Pacific counties has been formed for the purpose of marketing the berry output from a large acreage in Western Washington. The purpose of the organization is said not to be obtaining a higher price from the consumer, but to facilitate distribution.

TO provide facilities for handling more than 150,000 boxes of apples through the Dryden unit of the Wenatchee District Co-operative Association a modern frost proof brick warehouse, two stories high, will be built immediately upon a site along the Great Northern railway track at a cost of \$25,000. The destruction of the Bohlke Fruit Company's warehouse by fire last February left Dryden without adequate storage and loading facilities. The new warehouse will be designed for the rapid handling of fruit, both in receiving and shipping.

APPLE growers of the Spokane Fruit Growers' Company are amply protected in the matter of boxes for their tonnage this season, according to Charles J. Webb, assistant manager of the company. Because of the abnormally heavy crop in the Northwest this year, the box situation is causing some of the organizations and many of the growers considerable anxiety. With an estimated Northwestern crop of 40,000 cars of apples, 750 boxes to the car, the 1921 apples will require 30,000,000 boxes. Where the box supply was not contracted for early in the season difficulty may be experienced later in securing enough.

PACKERS of pears and apples in the Yakima district will receive five cents a box for the season of 1921, instead of six cents, the prevailing wage last year, according to a statement issued by the Yakima Fruit Growers' Association.

THROUGH the agency of the Washington Berry Growers' Association, growers of Sumner and the Puyallup valley have marketed this season 145 cars of fresh berries, more than 75 per cent of which have been placed on the market as far east as Minneapolis, according to F. H. Krug, sales manager for the association. Ap-

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and all kinds of Fruit and
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The Value of An Apple

depends greatly on its appearance. When Nature has done her part, giving size, color and shape to your fruit, do not lessen your profit by use of imperfect picking devices, which may bruise or mar the fruit's appearance, when you can buy

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Price \$2.00 Each

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Portland Picking Bag

proximately 45 cars of fresh berries have been sold in Chicago, where for the first time in the history of the valley berry business Chicago has been cultivated as a market rather than a dumping ground for excess shipments, according to Mr. Krug.

IDAHO

A LARGE portion of the apple crop at Fruitland is reported to be already in the hands of buyers at profitable figures to the grower. As an instance of the prices being paid for apples at Fruitland this year one sale is reported of \$28,000 for the fruit from an orchard property that last year was offered for sale at \$19,000, including land, improvements and water rights. The apple crop at Fruitland is estimated this year at 1,200 cars and is expected to bring to growers nearly \$2,000,000.

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E. F. STEPHENS, owner of extensive orchards near Nampa, reports that he has contracted a large part of his apple crop to be shipped in bulk at \$60 a ton and will receive \$1.65 for the portion of it that will be shipped in baskets. The crop from the Stephens orchards this year will total 35,000 to 40,000 bushels.

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A T Twin Falls the apple crop is estimated to be 50 per cent better than it was in 1920. The shipment this year is expected to be 500 cars and the orchards having been well cared for, the quality of the fruit is reported to be of the finest.

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MONTANA

WITH the completion of its new warehouse at Hamilton, the Equity Association is in shape to handle 100,000 boxes of apples this year, according to Manager O. M. Gerer. Last year the association handled 85,000 boxes. The new warehouse will be equipped with two Cutler graders and a system of gravity conveyers that will take the apples from the growers' wagons and finally deliver them in the railway cars. Apple growers at Hamilton, which is largely the center of the apple industry of the Bitter Root valley, are reported to be in close touch with the buyers and indications point to a higher range of prices than were received last year.

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Gasoline
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SYKES' SERVICE BULLETIN

Vol. I

Portland, Oregon, September, 1921

No. 1

What Sells Apples?

In the August Blue Goose News, the New York manager of the American Fruit Growers, Inc., makes special mention of the fact that **CONDITION** of the fruit upon arrival, **APPEARANCE** of the fruit, and particularly of the package, play an important part in determining the selling price. It is the **EYE** which brings the first favorable or unfavorable impression.

Rich red-faced Northwestern apples smile right into your face when you open a box packed under the "Sykes System." All of the goodness of the fruit is apparent to the **EYE**—of course if **YOUR** fruit is inferior it might be well for you to continue to cover it as in the past with a white news wrap, although you are not improving its condition.

The **RECORDS** show that apples packed with Sykes Safety Separator Wraps not only come out of storage in **BETTER CONDITION** than fruit wrapped in the ordinary way, but **SELL BETTER**, for they have the requisite **APPEARANCE**. The salesman can **DRESS** up a box of Syked fruit quicker and better than where any other wrap is used. **THAT** means better average prices. If you **DOUBT** this in any way make us **PROVE** it—we can.

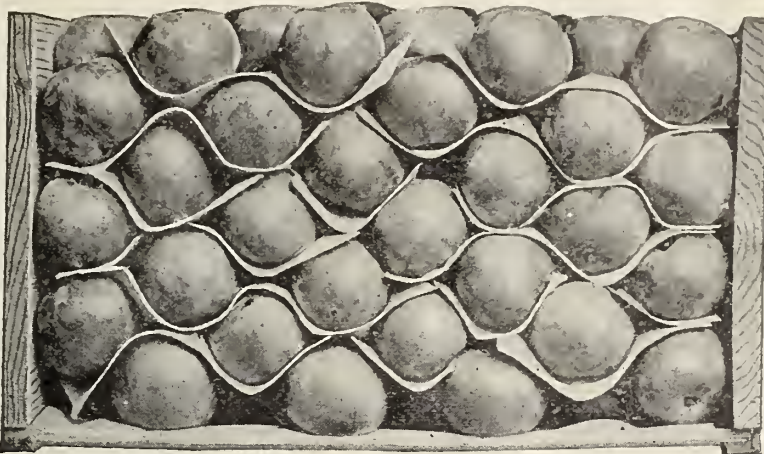
BIG VICTORY IN FIGS

George Sykes, the inventor of the Sykes System of fruit packing, was called to Fresno, Calif., early this season by the fig growers' organization and requested to invent a special wrap, by the use of which **FRESH FIGS** might be marketed in the Eastern markets. The Sykes Fig Wrap resulted after many tests. Of course, every one was skeptical—fresh figs had never carried successfully under any system evolved by the experts.

The Associated Press, under date of June 28, told the wonderful story of the arrival of the **FIRST CAR** of **FRESH FIGS** ever seen in Chicago. On the auction block the 1188 packages (6 lbs.), averaged \$1.81; the remainder of the car a few days later in New York sold for \$2.70 package average. General Manager Niswander said: "The price (Chicago sale) is remarkably satisfactory—it is really higher than we had anticipated." The Associated Press report said: "Owing to the perishable nature of the fruit its sale this far East has **NEVER BEFORE** been attempted. The figs stood the trip well and were reported as having retained their flavor."

Other shipments are now being made from the late crop with most satisfying results.

Do you wonder why the name Sykes is now widely known in the Fresno district? Just stop and **REASON** this little point out—**WHY** do you **SMOTHER** an apple with a close, tight wrap? Are figs any **LESS** perishable than



apples? Sykes System does **NOT** smother fresh figs. You have **SEEN** that the Sykes Wraps **CARRY** fresh figs safely. Just figure how much **MORE** valuable is a car of fresh figs than a car of apples.

"SYKEING" CALIFORNIA ORANGES

Here is a nut to crack which will interest **YOU**. It may cause you to **FIND** more real profits in your apples this season.

Last May the Sykes Orange Safety Separator Wrap was introduced into California. Each packing house foreman was asked to put the wrap under the most severe tests. An experienced orange packer demonstrated the pack and continuously visited each house until **EVERY** packer knew the system. One house after another tried the new separator wrap in a small way, then on a larger scale, and finally a number **ADOPTED** it for **THIS** season's pack.

It takes 83 wraps to pack a box of oranges. During June Southern California orange houses **USED** 460,000 wraps; in July, 650,000, and in August the total reached 1,340,000. The **INCREASE** came largely from **REPEAT** orders. The season's total shows **NOW** something over 3,000,000 wraps used **THIS** season. What's the answer? The **RIGHT** way to pack oranges is **NOT** to smother them. The **RIGHT** way to pack apples is **NOT** to **SMOTHER** them. If **NATURE** had intended that fruit should be **SMOTHERED** she would have provided a second coat or hide. Fruit **REQUIRES** oxygen, for fruit surely breathes. Make your own tests—put an apple in a dark desk drawer and lay another on top of the desk; examine both at the end of a week or so—that **OUGHT** to **POINT THE WAY**.

DEMANDING SYKES PEAR WRAPS

Last season several Canadian canneries bought California pears in lugs, also in pear boxes. As an experiment the shipper packed with Sykes Safety Pear Separator Wrap. One car was shipped unwrapped and another wrapped the usual fashion.

The canneries **DEMANDED** a rebate upon both and **THIS** season **REQUIRED** that all fruit shipped them be Syked. Certainly there must be a **REASON**—the fruit carried perfectly.

Have **YOU** a car or so of cannery pears yet to move? Why not **TEST** it out for yourself—if you **DO** you will use Sykes **ALWAYS** in the future.

SPECIAL WRAP FOR EACH FRUIT

An orange has one kind of hide or skin, an apple another and a pear still another. You can go on down the list of prunes, plums, figs and so on. Each has its own type of skin. Is it **LOGICAL** that the **SAME** wrap which has been used for time immemorial should be **ADAPTED** to **ALL** kinds of fruit?

The meat in the coconut in the Sykes System is that **EACH** variety of fruit has had its own **SPECIAL** type of wrap designed for it and it alone. This has been done by an expert fruit packer, who has experimented for years along scientific lines—**YOU** get the benefit of his many years' work—and at no cost to you.

MAY WE SEND YOU PROOFS?

We have on file a number of recent letters which so fully **PROVE** all the claims made for the Sykes System that any argument is out of the question. We will deem it a privilege to mail you copies of these letters along with samples of any type of wrap you may be interested in. Don't take our word for it, but **SEE** what the other fellow has found out for himself. We are **NOT** making any point of the **SAVING** in **COST** of **PACKING**—you will quickly discover **WHERE** the Sykes wrap means a **PROFIT** to **YOU**.

SYKED ORANGES—2000 CARS

During the **FIRST** season and in the face of the most critical conditions the Sykes Safety Separator Wrap has been used on over 2000 cars—up to August 15.

That **OUGHT** to mean something to **YOU**. If you are at all informed about the California orange deal you will know that California has the reputation for getting the **BEST** in everything from wrap to box. You also know that California fruit is the **STANDARD** in the Eastern markets when it comes to appearance or dress. No State has such wonderful fruit packing plants with every device known to handle large volume and yet preserve the best appearance. California demands the **BEST**—and California, you must admit, **GETS** the **RESULTS**.

Just figure it out for yourself—what the Sykes wrap has done for the California fresh fig and then what it has done for the California orange—and all of it **THIS** season. Is it not possible for **YOU** to get equally as good **RESULTS** with your apples?

EXCLUSIVE DISTRIBUTORS SYKES WRAPS

BLAKE-McFALL CO., Portland, Oregon
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PACIFIC FOLDING BOX FACTORY, San Francisco

Our Inquiry Department

FILBERT TREES

KINDLY reply to query relative to filbert trees: Is there any particular season when they should be set out? Would slips from two year old trees answer? Kindly give instructions as to care of young plants, soil, etc.—F. J., Washington.

(1) The best time to plant filbert trees is in the fall or early winter. (2) Slips or shoots from two year old trees will do if they have sufficiently developed roots. Before planting the land should be thoroughly plowed and harrowed and put in good condition. In setting, the best practice is to place the trees about 20 feet apart. The holes should be dug sufficiently large to give the roots plenty of room and filled in at the bottom with some good top soil and some stable manure added. Unless the soil is rich it should receive for several years a dressing of barnyard manure or other fertilizer. In caring for the young trees, clean cultivation should be practiced during the growing season, with a cover crop planted in the fall and plowed under in the spring. To have the young trees develop properly, all suckers and shoots should be removed from them as quickly as they develop. The soil for a filbert orchard should be of good quality, well drained and yet have the ability to hold moisture throughout the summer. Where the soil is deficient in lime this material should be supplied.

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WOOLLY APPLE APHIS

I have been informed by several orchardists who have examined trees in my orchard that are in a bad condition that they are attacked by woolly aphis. What can I do to control this pest.—M. H. G., Washington.

So far no hard and fast remedy has been developed for the control of this insect. The Oregon Agricultural College Experiment Station gives the following as the best treatment: For infested bark and branches spray with kerosene emulsion 11 gallons stock solution to 100 gallons; miscible oil, 3 to 100; or nicotine sulphate, 1 pint to 100 gallons with 5 pounds of soap for a spreader. A driving spray should be used to penetrate the wooly coating of the insect. It also says that root forms on young trees have been controlled by burying tobacco scraps or dust in trenches over the roots and that miscible oil 5 to 100 or kerosene emulsion 14 gallons stock solution to 100 gallons poured in the hollow about the base of the tree has given some degree of control.

Box Shooks

East Side Box Co.

Manufacturers
SPRUCE AND
HEMLOCK

Box Shooks

Foot of Spokane Avenue
Portland, Oregon

Fair Dates

FAIRS that will be held in the Northwest this year at which fruit will form an important part of the exhibits will be held on the following dates:

Oregon State Fair, Salem, September 26 to October 1.

Washington State Fair, Yakima, September 19 to 24.

Idaho State Fair, Boise, September 26 to October 1.

TREES AND SHRUBS



Fruit trees budded from bearing orchards. Apple, Pear, Cherry, Peach, Plum, Prune, Apricot, Quince, Grape Vines, Shrubbery, Plants, Raspberries, Blackberries, Logans, Dewberries, Asparagus, Rhubarb, Flowering Shrubs, Roses, Vines, Hedge, Nut and Shade Trees. Carriage paid. Satisfaction guaranteed.

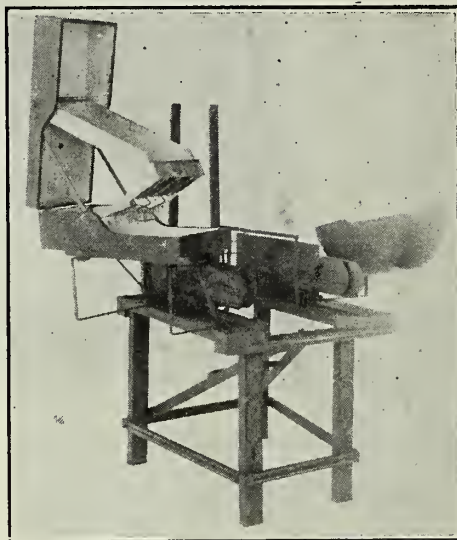
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ADJUSTABLE TO ALL STYLES AND SIZES OF BOXES

Handle poor shoo more rapidly than other benches handle good material. Make more and better boxes. Buy from the Manufacturer and save money: \$30.00 each without racks; \$35.00 each with racks to hold stripper and cleats. Prices f. o. b. Spokane, Washington.

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Special Mixtures for Wet Land—Dry Land—Burns—
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Western Agents "CLIPPER" FANNING MILLS

Cannery Notes

OWING to the fact that the trade would not buy canned goods at the prices asked early in the season many canneries remained idle or put up limited packs. The result is that the output of canned fruits is much smaller than was expected. With the larger part of the surplus of canned goods carried over from last year being rapidly cleaned up the demand for new stock is strong and canners are looking forward to a prosperous season next year.

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A RECENT innovation at the plant of the King's Products Company at Salem, was the installation of an attrition mill for use in the manufacture of pumpkin flour. The new machine, which will greatly facilitate the manufacture of this material, was made necessary, due to the increased demand which the company has received for its pumpkin pie filler.

Don't Experiment

It costs money. For \$20.00 you can get my blue prints.

The DENCER DRIER will shorten time of drying and save money on fuel.

It turns out a superior product. It costs less to dry per ton, and less to build than any other drier of same capacity.

I use only one stove for six tunnels. Each tunnel holds 136 half bushel trays.

My driers have been a pronounced success for five years.

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This means quick handling, considerable economies and the fruit being sold in the freshest possible condition, which means greater returns.

For dependable export information write us at 60 State Street, Boston, Mass., or 127 Duane Street, New York City.

Water Instead of Ice!



This process of cooling by evaporation is recommended by the United States Department of Agriculture, and is being used successfully in thousands of homes. The Empire Iceless Refrigerator will save your food from spoiling through the hot summer months, and there is absolutely no expense attached to its use. Made also in windlass type for use in wells, etc. It is a proven success, and is guaranteed to do the work. Let us send you descriptive folder and prices.

Farm Supply Company

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With the Poultry

TUBERCULOSIS IN POULTRY

TUBERCULOSIS in a poultry flock may be introduced in several ways such as receiving infected fowls, exposure to neighboring infected flocks using same range, infection of premises by free-flying birds, carriers, such as man or animals, whose shoes or feet may carry infected droppings from nearby infected farms. Most eggs harboring the organism fail to hatch, thereby reducing to a minimum the danger of infection from this source, but if infected eggs are thrown to the chickens, the disease may be established in the flock.

Although birds may become infected at any age, the disease is not readily detected by ordinary observation in those under 1 year old, because months are required for the bacilli to multiply in the system sufficiently to interfere with the normal functioning of the body. The older fowls, from 2 to 3 years old, are most likely to display symptoms and show a high death rate.

One of the first symptoms is gradual emaciation, which becomes especially noticeable in the breast muscles. These diminish in size until in advanced stages there is scarcely any flesh left on the breast bone. Feeling the breast region will readily detect this wasting. The appetite continues good. Lameness in one or both legs, or drooping of one or both wings is another symptom.

A skilled operator can apply the intradermic tuberculin test to detect the presence of the disease, but medical treatment for fowls is futile. The wisest preventive measure consists in slaughtering the infected fowls. Fowls in good flesh may be used for food if they show no lesions or only slight ones. Those fowls that are badly diseased and all visceral organs should be burned. The premises should be disinfected thoroughly, including all drinking, eating and other utensils.

THE BACKYARD FLOCK

THE backyard flock should have in addition to the table scraps a light feed of grain every morning.

Four or five handfuls of grain—about one-half pint—scattered in the litter will be sufficient for a flock of 20 to 25 hens. By handful is meant as much as can be grasped in the hand. By scattering it in the litter the hens will be compelled to scratch in order to find the grain and in this way to take exercise, which is decidedly beneficial to them.

In case not enough good, sound, substantial table scraps are available to furnish full feeds, both at noon and at night, another feed of the grain mixture should be thrown into the litter at the night feeding and should consist of as much as the hens will eat up clean. In summer or during suitable weather the grain can be fed by scatter-

ing it on the ground outside the house. A good grain mixture for this purpose is composed of equal parts by weight of wheat, cracked corn, and oats. Another suitable grain mixture is composed of two parts by weight of cracked corn and one part of oats.

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TEACHING CHICKS TO ROOST

WHERE a large number of chicks are being raised in one brooder house difficulty is often experienced in preventing the birds from piling up at night after the heat is removed, and causing serious losses. To prevent this overcrowding the birds should be taught to roost as early as possible. If roosts are made out of one by three inch strips placed flat so as to provide a three-inch roosting surface, and these are placed twelve to fifteen inches from the floor, the birds can easily be taught to go to roost. If the chicks do not go up on the roost of their own accord they should be gently placed on the roosts after dark for one or two nights until they get the roosting habit.

POULTRY NOTES

FOR the best results turkeys, geese, ducks and hens should be kept in separate quarters.

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IT DOES not pay to winter poor paying birds. Get rid of the culls this fall as early as possible.

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KEEP the roosts clean at all times, but also remember that it is just as important if not more so to keep the nests clean.

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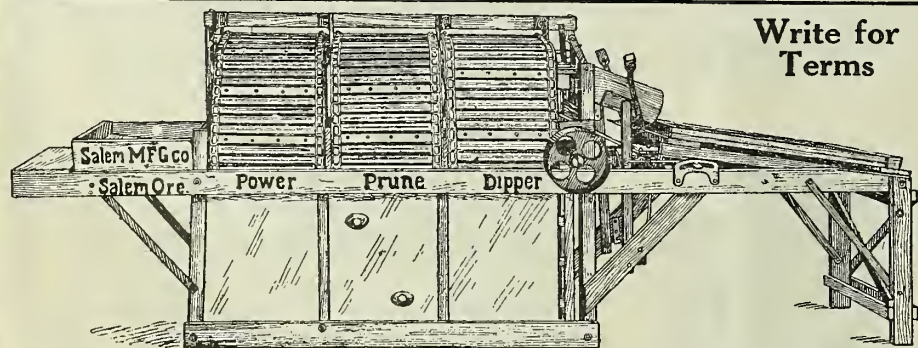
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Marketing News of Interest

THE largest walnut crop in the history of Oregon is expected this year. The trees have largely recovered from the effects of the freeze of two years ago and are bearing heavily this year. In addition there is a large acreage of young trees just coming into bearing this year for the first time.

Reports from Yamhill county indicate that it is not uncommon to find clusters of six nuts and all indications point toward a bumper yield. The crop will go into the barest market in years, according to information from the California Walnut Association. Foreign stocks are not on hand to retard the market as they were last year and a serious failure of the French walnut crop this year indicates that there will be little competition from that source.

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THE first car of Winter Banana apples of the 1921 crop was sold by the Rock Island unit, in the Wenatchee district, to G. M. H. Wagner & Son for prices that compare favorably with those received for this variety in the last two years. Three dollars a box for all extra fancy apples, \$2.50 for fancy and \$2 for C grade will be received. Last year the unit received \$3.40 a box for the first car shipped and the year before the top price for extra fancy was \$3.80.

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THE entire tonnage of pears controlled by the Oregon Growers' Co-operative Association in the Willamette and Umpqua valleys has been sold for prices that are thought to be the best obtained for canning pears this season. The prices obtained were \$65 a ton for No. 1s and \$35 for No. 2s, f. o. b. shipping point. The terms of sale will permit of early advances to the grower when the fruit is marketed. The canning pears of the California Pear Growers' Association were sold at \$61.75 for No. 1s, and \$33 for No. 2s. Reports from Yakima show that the first ten cars of pears from that district sold for \$60 per ton, but that the price subsequently dropped to \$40 and \$45 per ton.

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ACCORDING to reports received at Spokane, Wash., the Washington peach crop for 1921 is predicted at 25,125 tons, compared with 8,813 tons last year, when crops were unusually poor, and a crop of 30,333 tons of pears is forecasted, compared with 46,792 tons in 1920. In both Washington and Oregon the yield of all berries were reported to be about 50 per cent larger than they were last year.

NEARLY one-third of the expected 300-car apple crop of the Spokane Valley Growers' Union has been placed in the east within the last week, at prices ranging as high as \$3.00 and \$3.25 per box, for extra fancy grades, according to recent reports. Edward Peirce, manager of the Union, who is now in the east, has telegraphed orders for more than 50 carloads of apples, with prices up to \$3.25 per box, f. o. b. Spokane, shipments to be made to such points as New York, Philadelphia, Pittsburgh, Washington, D. C., and Boston.

the average size of the dried product will be 40s. Last year they ran strongly to 50s. The prunes are giving early indications of a good sugar content which will develop if weather conditions remain favorable. Last year the sugar content was low and as a consequence they dried down to 14 to 17 pounds to the bushel. It is expected that they will dry out heavier this season.

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FINAL estimates show that the Oregon Growers' Co-operative Association will harvest 1000 cars of apples in the Willamette, Umpqua and Rogue River Valleys and The Dalles district. The Rogue River Valley will supply 600 cars of these. The fruit is large, well colored, and unusually free from imperfections. The fruit has more color than is usually the case at this time of the year and present indications are that the fruit will be superior to that shipped in the average years. Harvesting will probably begin a week or ten days earlier than last season. Grimes will move September 5 to 10, Wagener, September 20 to October 1, Spitzenberg and Ortley, October 1 to 15, with Rome, Newtown and other late varieties following.

Oregon Growers' Association Notes

EARL PEARCY, president of the State Society of Horticulture, reports that prunes will be of good size this year. As field representative of the Oregon Growers' Co-operative Association in the Willamette Valley he has made a careful study of the situation and is of the opinion that

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BARGAIN—Fine young pear orchard; 12 acres, 5 bearing, balance 3 years. Particulars, Owner, P. O. Box 182, Kelseyville, Calif.

FOR SALE—17 55/100 acres all cleared in Willamette Valley 30 miles from Portland. Splendid fruit or nut land. \$200 per acre. Terms if desired. B. L. Herbert, 51 E 8th St., North, Portland, Oregon.

WANTED—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

WANT to hear from parties having farm for sale. Give particulars and lowest price. John J. Black, 197th St., Chippewa Falls, Wisconsin.

CUT-OVER and Developed Lands, 15 to 25 miles N. E. Spokane; extra good soil; spring brooks; grows grain, vegetables hay, fruits; several developed ranches; few stock ranches; \$10 to \$20 acre; 10 years' time, 6 per cent interest. Free lumber. Write owners for free book. Edward & Bradford Lumber Co., Elk, Washington.

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MISCELLANEOUS

HAPPY HOME HONEY—From blossoms of alfalfa and sweet clover, in liquid form; 6 10-lb. pails, \$9.00; 1 60-lb. can \$8.40; 2 cans, \$16.00, at Mabton. H. N. Paul, Mabton, Washington.

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Bees and Beekeeping

THAT beekeeping is profitable is shown by an investigation recently made by Oregon Agricultural College experts who reported that many beekeepers throughout the state had incomes ranging from \$1,500 to \$4,000, while some made earnings of more than \$10,000. The investigation also developed the fact that the demand for men trained in beekeeping is urgent. Many of the requests for trained beemen are coming from commercial horticulturists who want men trained in both beekeeping and horticulture to take charge of their orchards and bees. Large commercial apiaries are also looking for men experienced in beekeeping to manage their apiaries.

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More business is reported to have been done in box apples at the annual convention of International Apple Shippers, held at Cincinnati, this year, than at any previous meeting. The largest sale reported was a block of 60,000 boxes of Wenatchee fruit.

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